

5-2017

# The Impact of Tablet Digital Texts Vs Print Texts on Seventh Grade Students' Reading Achievements, Strategies and Motivation

Sobhi Yousef Ahmed Abuhattab

Follow this and additional works at: [https://scholarworks.uaeu.ac.ae/all\\_theses](https://scholarworks.uaeu.ac.ae/all_theses)

Part of the [Education Commons](#)

---

## Recommended Citation

Ahmed Abuhattab, Sobhi Yousef, "The Impact of Tablet Digital Texts Vs Print Texts on Seventh Grade Students' Reading Achievements, Strategies and Motivation" (2017). *Theses*. 637.  
[https://scholarworks.uaeu.ac.ae/all\\_theses/637](https://scholarworks.uaeu.ac.ae/all_theses/637)

This Dissertation is brought to you for free and open access by the Electronic Theses and Dissertations at Scholarworks@UAEU. It has been accepted for inclusion in Theses by an authorized administrator of Scholarworks@UAEU. For more information, please contact [fadl.musa@uaeu.ac.ae](mailto:fadl.musa@uaeu.ac.ae).

United Arab Emirates University

College of Education

THE IMPACT OF TABLET DIGITAL TEXTS VS. PRINT TEXTS  
ON SEVENTH GRADE STUDENTS' READING  
ACHIEVEMENTS, STRATEGIES AND MOTIVATION

Sobhi Yousef Ahmed Abuhattab

This dissertation is submitted in partial fulfillment of the requirements for  
the degree of Doctor of Philosophy

Under the Supervision of Dr. Sadiq Abdulwahed Ismail

May 2017

### Declaration of Original Work

I, Sobhi Yousef Ahmed Abuhattab, the undersigned, a graduate student at the United Arab Emirates University (UAEU), and the author of this dissertation entitled "*The Impact of Tablet Digital Text vs. Print Text on the Seventh Grade Students' Reading Achievements, Strategies and Motivation*", hereby, solemnly declare that this dissertation is my own original research work that has been done and prepared by me under the supervision of Dr. Sadiq Abdulwahed Ismail, in the College of Education at UAEU. This work has not previously been presented or published, or formed the basis for the award of any academic degree, diploma or a similar title at this or any other university. Any materials borrowed from other sources (whether published or unpublished) and relied upon or included in my dissertation have been properly cited and acknowledged in accordance with appropriate academic conventions. I further declare that there is no potential conflict of interest with respect to the research, data collection, authorship, presentation and/or publication of this dissertation.

Student's Signature: \_\_\_\_\_



Date: \_\_\_\_\_

29-May-2017

Copyright © 2017 Sobhi Yousef Ahmed Abuhattab  
All Rights Reserved



## **Advisory Committee**

1) Advisor: Dr. Sadiq Abdulwahed Ismail

Title: Associate Professor

Department of Curriculum and Methods of Instruction

College of Education

2) Member: Dr. Negmeldin Alsheikh

Title: Associate Professor

Department of Curriculum and Methods of Instruction

College of Education

3) Member: Dr. Sally Mohamed Ali

Title: Associate Professor

Department of Linguistics

College of Humanities and Social Sciences

## Approval of the Doctorate Dissertation

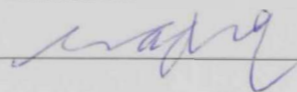
This Doctorate Dissertation is approved by the following Examining Committee Members:

- 1) Advisor (Committee Chair): Dr. Sadiq Abdulwahed Ismail

Title: Associate Professor

Department of Curriculum and Instruction

College of Education

Signature 

Date 11/5/2017

- 2) Member: Dr. Negmelden Alsheikh

Title: Associate Professor

Department of Curriculum and Instruction

College of Education

Signature 

Date May 11, 2017

- 3) Member: Prof. Hamza Dodeen

Title: Professor

Department of Psychology and Counseling

College of Humanities and Social Sciences

Signature 

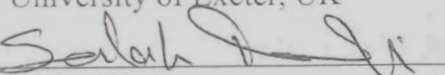
Date May 11, 2017

- 4) Member (External Examiner): Dr. Salah Troudi

Title: Associate Professor

Graduate School of Education

Institution: University of Exeter, UK

Signature 

Date 11/5/2017

This Doctorate Dissertation is accepted by:

Dean of the College of Education: Professor Bernard Oliver

Signature Bernard Oliver

Date 29/5/2017

Dean of the College of Graduate Studies: Professor Nagi T. Wakim

Signature Nagi T. Wakim

Date 29/5/2017

Copy 14 of 15

## Abstract

Developing good reading skills and strategies in the English language is very important for the success of academic, cultural, economic and personal pursuits. However, some students are still experiencing serious difficulties in their reading comprehension skills that are attributed to an inadequate use of reading comprehension strategies, lack of reading motivation and inappropriate uses of resources. The study aimed at exploring the impact of Tablet Digital Texts versus Print Texts on seventh grade students' reading achievements, reading strategies, and reading motivation. A quantitative method with a correlational design was employed in this study. Moreover, the study sample consisted of seventh grade students (N=75) assigned to two groups: tablet digital texts group (n=34) and print texts group (n=41). For collecting quantitative data to answer the five research questions, three measures were used (a) Reading Achievement Test to measure the Reading Achievements, (b) Survey of Reading Strategies to identify the reading strategies, and (c) Survey of Reading Motivation to identify the motivation levels of the students. The reading achievements, strategies, and motivation were compared and correlated in and between the two groups. The results of the study showed that the tablet digital texts group scored higher than the print texts group in the reading achievements, reading strategies and reading motivation. Besides, most correlations were positive in both groups between the reading achievements, reading strategies and reading motivation. However, the correlation coefficients between the three variables in the tablet digital texts group were reported higher than the print texts group. Based on the study results, some recommendations are offered for students, teachers, and educators for maximizing the reading achievements, improving reading strategies and increasing students' reading motivation. Schools are recommended to

shift towards tablet integration to enhance teaching and learning reading. The study may contribute to fill the research gap within the Gulf area and beyond as there are limited research studies about integrating smart technology in teaching and learning reading at the school levels.

**Keywords:** Tablet Digital Texts, Print Texts, Reading Strategies, Reading Achievement, Reading Motivation.

## Title and Abstract (in Arabic)

أثر استخدام النصوص اللوحية الرقمية مقابل النصوص الورقية المطبوعة على المستويات التحصيلية في القراءة و استراتيجياتها ودافعية القراءة لدى طلبة الصف السابع

### المخلص

تُعتبر القراءة و تنمية مهاراتها واستراتيجياتها في اللغة الإنجليزية من متطلبات النجاح في النواحي الأكاديمية والثقافية والاقتصادية والشخصية. ومع ذلك، لا يزال الكثير من الطلبة يعانون من صعوبات جمة في مهارات القراءة، وفهم النصوص. وقد يرجع ذلك لعدم التوظيف المناسب لاستراتيجيات القراءة والفهم، وضعف دافعية القراءة لدى الطلبة وعدم الاستخدام المناسب للوسائل التعليمية. هدفت الدراسة إلى التحقق من أثر استخدام النصوص اللوحية الرقمية مقابل النصوص الورقية المطبوعة على المستويات التحصيلية في القراءة، و استراتيجيات القراءة، ودافعية القراءة لدى طلبة الصف السابع. واستخدمت الدراسة الطريقة الكمية والتصميم الارتباطي، لجمع عينة من 75 طالب وطالبة في الصف السابع، تم تقسيمهم إلى مجموعتين: مجموعة النصوص اللوحية الرقمية (34) ومجموعة النصوص الورقية المطبوعة (41). تم استخدام ثلاث أدوات بحثية في الدراسة وهي اختبار القراءة التحصيلي القبلي والبعدي لقياس المستويات التحصيلية في القراءة والفهم لدى الطلبة، واستبانة استراتيجيات القراءة للتعرف على استراتيجيات القراءة، وكذلك تم استخدام استبانة دافعية القراءة لتحديد مستويات دافعية القراءة لدى الطلبة. وبعد ذلك تم توظيف البيانات الناتجة عن هذه الأدوات البحثية الثلاث في الإجابة عن الأسئلة البحثية الخمسة لقياس ومقارنة المستويات التحصيلية في القراءة، و استراتيجيات القراءة، ودافعية القراءة لدى الطلبة في كل من المجموعتين وبينهما أيضاً. وأظهرت نتائج الدراسة تفوقاً لطلبة الصف السابع الذين يقرؤون باستخدام النصوص اللوحية الرقمية على أقرانهم الطلبة الذين يستخدمون النصوص الورقية

المطبوعة في المستويات التحصيلية في القراءة ، و استراتيجيات القراءة ، ودافعية القراءة. كما كانت معظم الارتباطات إيجابية في المستويات التحصيلية في القراءة، و استراتيجيات القراءة و دافعية القراءة في المجموعتين. كذلك حصلت مجموعة النصوص اللوحية الرقمية على معامل ارتباط أعلى عن مجموعة النصوص الورقية المطبوعة في جميع المتغيرات الثلاث. يمكن أن تسهم هذه الدراسة بتقديم توصيات لتحسين مستويات الفهم والقراءة وإلقاء الضوء على الاستراتيجيات التي تزيد من كفاءة القراءة لدى الطلبة، ودافعية القراءة لديهم . كما توصي الدارسة بالتحول نحو دمج الألواح الرقمية لتنمية تعليم وتعلم القراءة. كذلك قد تسهم هذه الدراسة في ملء الفجوة البحثية في منطقة الخليج وخارجها بسبب قلة الدراسات البحثية حول دمج التكنولوجيا الذكية في تعليم وتعلم القراءة على مستوى المدارس.

**مفاهيم البحث الرئيسية:** النصوص اللوحية الرقمية، النصوص الورقية المطبوعة،

استراتيجيات القراءة، المستويات التحصيلية في القراءة ، دافعية القراءة.

## Acknowledgements

My special thanks go to my dear advisor Dr. Sadiq Abdulwahed Ismail whose dedicated efforts, ongoing positive reinforcement and insightful systematic supervision fueled my journey of completing this dissertation.

I would like to thank my committee members for their guidance, support, and assistance throughout my preparation of this dissertation, especially Prof. Hamza Dodeen, and Dr. Sally Ali. I am also grateful to Dr. Negmelden Alsheikh who has been supportive to me in my journey of PhD.

My thanks are extended to Dr. Salah Troudi for his insightful feedback that helped me improve my study.

I would also like to thank all members of College of Education at the United Arab Emirates University for assisting me all over my studies especially Dr. Ali Khalfan, Dr. Hassan Tairab and Prof. Abdulmonem Ahmed Hassan.

Special thanks go to my parents, wife, sons, daughters, brothers, sister, uncles and aunts who helped me along the way. In addition, special thanks are extended to my best friend Amin Elkhyyat for his brotherly support.

Special thanks go to Mr. Mohammad Abu Al-Rob and Mrs. Catherine Elbouzaide for proofreading and editing my dissertation.



## Dedication

*All Praise Be to Allah, Lord of all the worlds*

*The Most Gracious, the Most Merciful.*

*And peace and blessing of Allah be upon the noblest of the*

*Prophets our prophet Mohammad peace be upon him.*

*To my beloved parents, wife, children, bothers, sister, uncles and aunts.*

## Table of Contents

Title.....	i
Declaration of Original Work .....	ii
Copyright.....	iii
Advisory Committee.....	iv
Approval of the Doctorate Dissertation .....	v
Abstract.....	vii
Title and Abstract (in Arabic) .....	ix
Acknowledgements.....	xi
Dedication.....	xii
Table of Contents.....	xiii
List of Tables.....	xvi
List of Abbreviations.....	xvii
Chapter 1: Introduction .....	1
1.1 Overview .....	1
1.2 Background .....	1
1.3 The Emirati Context.....	7
1.4 Problem Statement .....	11
1.5 Purpose of the Study .....	14
1.6 Research Questions .....	14
1.7 Significance of the Research.....	15
1.8 Limitations of the Study .....	17
1.9 Identification of Variables.....	18
1.10 Operational Definitions .....	18
1.10.1 Tablet Digital Texts .....	18
1.10.2 Print Texts.....	19
1.10.3 Reading Achievements.....	19
1.10.4 Reading Strategies.....	19
1.10.5 Reading Motivation.....	19
1.11 Organization of the Study .....	19
1.12 Chapter Summary.....	20
Chapter 2 : Literature Review.....	21
2.1 Introduction .....	21
2.2 Theoretical Framework .....	21
2.2.1 The Sociocultural Theory.....	22
2.2.2 Models of Reading in L2 .....	23
2.2.3 New Literacies Theory .....	26
2.2.4 Transactional Theory .....	27
2.2.5 Metacognition .....	29
2.2.6 Motivational Theories .....	31

2.3 Reading Comprehension .....	35
2.4 Technology and Reading Strategies .....	36
2.5 Reading Achievements and Technology .....	38
2.6 Relevant Research Studies on Technology and Reading .....	40
2.7 Tablet Integration in Classroom .....	44
2.8 Print Texts and Digital Texts .....	46
2.9 Technology and Motivation .....	52
2.10 Reading Achievements, Strategies and Motivation .....	55
2.11 Chapter Summary .....	57
Chapter 3 : Methodology .....	60
3.1 Introduction .....	60
3.2 Research Questions .....	60
3.3 Background and Setting .....	61
3.4 Materials .....	63
3.5 Design .....	66
3.6 Population and Participants .....	67
3.7 Sampling .....	67
3.8 Research Instruments .....	68
3.8.1 Pearson Reading Achievement Test .....	68
3.8.2 Survey of Reading Strategies (SORS) .....	71
3.8.3 Survey of Reading Motivation .....	74
3.9 Pilot Study .....	76
3.10 Data Collection Procedures .....	76
3.11 Data Analysis .....	78
3.12 Ethical Consideration .....	79
3.13 Conclusion .....	81
Chapter 4: Results .....	83
4.1 Introduction .....	83
4.2 Results of Research Question One .....	84
4.3 Results of Research Question Two .....	84
4.4 Results of Research Question Three .....	92
4.5 Results of Research Questions Four and Five .....	94
4.5.1 Correlations between Reading Achievements and Reading Strategies .....	94
4.5.2 Correlations between Reading Achievements and Reading Motivation .....	95
4.5.3 Correlations between Reading Strategies and Reading Motivation .....	97
4.5.4 Overall Correlations between Reading Achievements, Strategies, and Motivation .....	101
4.6 Summary of Results .....	102
Chapter 5: Discussion and Conclusion .....	105
5.1 Introduction .....	105

5.2 Discussion .....	105
5.3 Conclusion.....	127
5.4 Implementations and Recommendations .....	129
5.5 Limitations and Future Research Opportunities.....	131
References.....	133
List of Publications.....	156
Appendices.....	157
Appendix A .....	157
Appendix B .....	164
Appendix C .....	168
Appendix D .....	171
Appendix E.....	173
Appendix F.....	175
Appendix G .....	176
Appendix H .....	177
Appendix I.....	178
Appendix J.....	179
Appendix K .....	180
Appendix L.....	181
Appendix M.....	182
Appendix N .....	183
Appendix O .....	184
Appendix P.....	185
Appendix Q .....	187
Appendix R .....	189
Appendix S.....	191

## List of Tables

Table 1: Reliability Coefficients for Survey of Reading Strategies .....	73
Table 2: Reliability Coefficients for Survey of Reading Motivation .....	75
Table 3: Reading Achievements of Print Texts Group & Tablet Digital Texts Group .....	84
Table 4: Descriptive Statistics of Global Strategies in the two Groups .....	85
Table 5: Descriptive Statistics of Problem Solving Strategies in the two Groups.....	88
Table 6: Descriptive Statistics of Support Strategies in the two Groups .....	90
Table 7: Descriptive Statistics of the Subscales of Reading Strategies (Two Groups) .....	92
Table 8: Descriptive Statistics of Reading Motivation (Two Groups) .....	93
Table 9: Correlations between Reading Achievements and Reading Strategies .....	95
Table 10: Correlations between Reading Achievements and Reading Motivation in both Groups .....	96
Table 11: Correlations between Reading Strategies and Reading Motivation in both Groups .....	97
Table 12: Correlations between Reading Achievements, Strategies, and Motivation .....	102

**List of Abbreviations**

AV	Attainment Values
CCSS	Common Core State Standards
CEFR	Common European Framework of Reference for Languages
d	Size effect
EFL	English as a Foreign Language
ENV	Engagement Values
ESL	English as a Second Language
EV	Extrinsic Values
GCC	Gulf Cooperation Council
IELTS	International English Language Testing System
IV	Intrinsic Values
L1	The First language
L2	The Second language
M	Mean
MAP	Measures of Academic Progress ( Standardized Test)
NCES	National Center for Education Statistics
NWEA	Northwest Evaluation Association
r	Reliability Coefficients
RE	Reading Efficacy Values
SD	Standard Deviation
Sig	Significant Differences
SORS	The Survey of Reading Strategies

TOEFL	Test Of English as a Foreign Language
UAE	The United Arab Emirates
UAEU	The United Arab Emirates University
USA	The United States of America

## **Chapter 1: Introduction**

### **1.1 Overview**

This chapter presents a general framework of the research study. It sets the stage for navigating through the topic of this research study and its major themes including reading achievements, reading strategies, reading motivation, tablet integration and the uses of print texts. The research study also connects to the context of Teaching English as a Foreign Language (EFL) literacy within the United Arab Emirates (U.A.E) and beyond. Moreover, the research problem of students who have experienced serious difficulties in their reading skills is tackled in depth. Besides, the purpose of the study is set, and the research questions are addressed. Furthermore, the significance and the limitations of the study are highlighted. In addition, the two independent variables: Print Texts and Tablet Digital Texts, and three dependent variables: Reading Achievements, Reading Strategies, and Reading Motivation are identified and are operationally defined. The chapter is concluded by setting a plan of the entire study organization.

### **1.2 Background**

Due to the dramatic change in our lives and the transformation towards smart technology, the demand for literacy skills has been increasingly high and rapid. Thus, the advanced literacy achievement for all students has become an economic necessity for the development of the individual and nations since higher levels of literacy are needed for a variety of factors related to business, politics and global competition (Krashen, 2003).



The English language learning has become a vital necessity in the modern world, and its critical importance was emphasized by Krashen (2003) who stated that “ it is difficult in today’s world to be active and successful in International Business, Politics, Scholarships or Science without considerable competence in English” (p.100).

The English language proficiency is a key to students’ success at any level of higher education institutions and the work force not only in the United Arab Emirates, but also all over the world. The weakness in reading comprehension can impede students’ learning and may have a negative impact on their future careers. In discussing the literacy crisis and the cure, Krashen (1993) confirmed the significance of reading as a powerful tool for building a child’s vocabulary and confidence in accessing the school broad curriculum. It enables the child to read, write, comprehend texts and respond interactively.

Reading and understanding what is read in the English language represent a real challenge for many students in different countries whose standardized tests scores showed that the reading scores were the lowest among other skills (TOEFL IBT, 2013). Thus, the English language teachers are required to enable students to acquire various reading strategies to develop their reading comprehension skills, and thus enhance their progress whether they are reading digital or print texts (Wells, 2012; Fisher, Lapp, & Wood, 2011; Mardis & Everhart, 2011).

Despite the importance of literacy in general and reading in particular, reading comprehension instruction is still ineffective, and the resources used in classroom are too difficult and uninteresting for many students to read. Moreover, students are demotivated to read well due to their feeling of lack of efficacy, and poor reading skills (Al Noursi, 2013). In addition, creating a good reading culture

among students as a pleasurable and useful activity is challenging in the UAE context and other contexts as well (Beatty, Hyland, Hyland & Kelly, 2009).

To overcome the students' reading challenges and improve reading skills and other language skills, it is beneficial to integrate smart technology in instructional activities to provide students with critical inquiry, problem solving opportunities, and cooperation and collaboration. Smart technology integration might create an opportunity for interdisciplinary exploration from one side and increase students' reading strategies and reading motivation from another side (Leu, McVerry, O'Bryne, Zawilinski, Castek, & Hartman, 2009).

Smart technology has been extensively used in all aspects of modern life learning and has become a vital tool for creating successful lifelong learners. Due to the dramatic change and progress in smart digital technologies, people can connect with their social network and communicate anywhere and anytime. Participation in smart technology has been so ubiquitous that it has begun to reshape the ways that people view and understand the world. In addition, smart technology has started to reshape culture, thought, literacy, and education in general (Leu et al., 2009).

Educators and teachers should exploit the wealth of smart technology and its wide acceptance by students to overcome literacy skills challenges in general and reading skills in particular. In addition, the power of smart technology can enhance instructional and pedagogical practices and increase students' motivation in interactive learning. It is valuable to integrate smart technology in our daily teaching and learning strategies in order to enhance students' reading skills, which are very important for learning all the school subjects, especially learning the English language that has been predominating all the fields (Leu et al., 2009).

Another method to overcome students' reading difficulties is that students need to acquire reading strategies that help them build their basic reading capacities. Additionally, teachers are required to reinforce explicit and highly structured reading skills. Besides, English teachers need to exploit the tablet digital texts to instruct students to use the appropriate reading strategies (Kymes, 2007).

This study attempts to tackle reading achievements, strategies and motivation in both print and digital environments to understand literacy in general and reading in particular at the Schools' levels.

Reading strategies are known as behaviors which a reader uses to proceed through a text and engage in constructing meaning. A strategy is effortful, as it requires the reader to allocate energy and resources to engage in strategy use (Garner, 1987).

It is beneficial to question if readers can transfer reading strategies from print to digital texts. McNamara and Shapiro (2005) concluded, "The complexities of learning from linear text and hypertext are similar to those associated with general knowledge and skill acquisition" (p.21). Some reading strategies are applied to both print and digital texts, while others may depend on the medium.

For the digital texts, more strategies may be used due to the interactive features of the digital texts and accessible sources like dictionaries and other instructional applications like the use of sounds, combining visual and verbal messages. Reinking's study (2011) found out that digital texts could improve the skills of the reader and resulted in greater comprehension of a text.

It is important to identify strategies, which guide readers while approaching both digital and print texts. Comprehension is more likely to happen when students remain focused on both their task and the text. A comprehensive research on reading

strategy use was conducted by Pressley and Afflerbach (1995) who found out that skilled readers possessed a number of strategies that enable them to interact with texts and interrogate texts before, during, and after reading.

In the same reading context, acquiring reading strategies is important for improving students' reading comprehension in the second language learning (Alsheikh & Mokhtari, 2011). Thus, teachers need to train students to use more reading strategies to enhance their reading comprehension and increase their reading motivation and skills.

In the last decades, many studies had been carried out trying to understand how readers comprehended, stored, and retrieved text information. In addition, reading is defined as a reader's cognitive, metacognitive, or linguistic abilities to comprehend the text with the frequent support of different strategies and skills. Therefore, cognition, metacognition, linguistics, motivation, engagement, interaction, and involvement are highly recommended for any reading comprehension process (Randi, Newman, & Grigorenko, 2010). For this reason, the current study tackled most of these issues including the reading achievements, strategies and motivation as well as the interrelationships among them to explore the entire picture of the reading process.

Reading comprehension is one of the most useful lifetime skills, and it is the most complex and unique of all the cognitive activities since readers use their prior knowledge to construct meaning from the text. Reading comprehension is also critically essential for developing first and second language learners' reading proficiency and their ability to improve other language skills and critical thinking (Alkhawaldeh, 2011; Fahim, Barjesteh, & Vaseghi, 2012).

Teaching and using effective reading strategies improve the comprehension

of struggling and unskillful readers (Grabe, 2009). Thus, readers should be trained to use their prior or cognitive knowledge to understand the text and use different strategies to comprehend and monitor their understanding when they read (Karbalaei, 2010). Skilled readers are usually engaged cognitively and use the strategies purposely in any reading task to make sense of what they read and construct meaning (Samuels & Farstrup, 2011).

The reading strategies that are one of the major variables of the present study include three categories: Global Reading Strategies, Problem Solving Strategies and Support Strategies. These reading strategies help EFL learners to foster reading comprehension skills (Alsheikh & Mokhtari, 2011; Mokhtari & Sheorey, 2001; Kymes, 2007).

Global Reading Strategies are defined as planned and purposeful techniques or pre-reading activities that learners use and implement to manage or monitor their reading. They refer to pre reading activities that pave the stage for the process of reading (Alsheikh & Mokhtari, 2011; Mokhtari & Sheorey, 2001). Problem-Solving Strategies include functions and manners that readers use when they encounter difficulties in comprehending textual information (Alsheikh & Mokhtari, 2011; Mokhtari & Sheorey, 2001). Support Reading Strategies are additional strategies that include taking notes, reading aloud, underlining, using references, paraphrasing, going back and forth and asking oneself to find answers in the text. These strategies are used during and after reading (Alsheikh & Mokhtari, 2011; Mokhtari & Sheorey, 2001).

So far, it is broadly acknowledged that motivation plays a critical role in academic learning in general, and it is particularly true of the “sustained process of mastering an L2” (Dörnyei, 2005, p. 616). In addition, technology integration in

education improves students' motivation (Garnder, 2001). According to Ushida (2005), technology enhanced environment supports English language learners' perception and performance. Therefore, it motivated students to study regularly and productively to seize every opportunity to improve their language skills.

### **1.3 The Emirati Context**

In response to the dramatic change in the field of smart technology, The UAE Ministry of Education has taken a strategic initiative to implement smart technology in the public schools. This initiative started in academic year 2013-2014 and was intended to cover all the governmental schools over the next five years. The seventh grade students were provided with a tablet PC and high-speed 4G networks (Pennington, 2014).

Smart technology integration to enhance the educational process has become the major focus of the UAE educational policy. Therefore, digital literacy is significant for all educators including teachers in all disciplines. In addition, all teachers are required to respond to integrating smart technology in all their instructional and pedagogical practices and to acquire a profound understanding of what is expected of the 21<sup>st</sup> century learners concerning literacy skills. Moreover, teachers need to exploit exciting opportunities to enhance EFL literacy instruction (Ismail, Al-Awidi & Almekhlafi, 2012).

In the UAE context, some research studies have been carried out and the results of these studies are encouraging. They confirmed the importance of integrating technology in teaching and learning of the English language. For example, Ismail, Al-Awidi and Almekhlafi (2012) stated that technology has made a big contribution to the shift in teaching reading and writing of English as a Second



Language (ESL) and it was very effective in improving reading and writing skills; technology also assists students in doing extra-curricular activities and communicating with each other.

Another study was carried out by Ismail, Almekhlafi and Almekhlafy (2010) to examine teachers' perceptions about technology integration in both Arabic and English classes in K-12 schools in the UAE. The results of the study confirmed the unavoidable effect of technology on teaching practices, which in turn may promote students' learning in language classes. In addition, the teachers showed willingness to accelerate the technology integration in their instructional practices to improve language teaching and learning.

On the other hand, a research study conducted in Dubai by Patronis (2014) to examine the impact of the pedagogical potential of integrating the tablets on undergraduate students' performance in writing and reading comprehension. The results of the study showed no significant positive impact on the students' reading and writing standardized test results.

Despite the dramatic progress in the field of educational technology and its availability for use in teaching and learning, instructional practices are still more traditional due to financial factors and the lack of teachers' professional development (Adams, 2010). Moreover, some teachers are still unconfident and may be incompetent regarding the effective uses of new technology in their instructional practices (Chen & Chang, 2006; Plowman & Stephen, 2005).

Since students have become digitally native, they are in need of accessing a wide variety of instructional technologies that provide appropriate learning experiences based upon effective implementation of tablets and other digital devices

and programs to bridge the gap between schools and the real world on one hand and students and teachers on the other (Wright & Wilson, 2011).

The smart technology phenomenon has been spread all over the world in order to reform education and enhance literacy skills in EFL and ESL contexts. Proponents of smart technology integration such as Crichton, Pegler and White (2012) stated that technology integration in teaching and learning is the future educational and instructional reforms. Besides, Haydon and Hawkins (2012) stated that tablet integration in the classroom is an effective motivational tool for students with disabilities since tablets have a positive impact on students' active engagement, and their academic achievements. Moreover, Wright and Wilson (2011) affirmed that teachers need to incorporate technology in the classroom to foster teaching and learning, increase students' engagement and reinforce their motivation. Furthermore, Bennison and Goos (2010) stated that many studies endorse the educational use of tablets that have become a widely recognized and implemented trend in classroom.

Many research studies have emphasized that tablet integration provides an opportunity for effective pedagogical and instructional practices in the classroom. For instance, Bennett (2011) stated that tablets implementation is advantageous in delivering content in an interactive way and providing instructional resources that enhance literacy skills and increase their engagement and motivation.

It has been recognized so far that many young people, digitally native, are very fond of smart technology to the extent of addiction. Thus, tablets are a tool that might increase their motivation to reading and studying. For example, Webb (2012) supported this idea and found that students using the tablets demonstrated high motivation and a demand for its use. Additionally, he also stated that students using iPad had a 6% greater chance of passing the Reading Test. Furthermore, Henderson



and Yeow (2012) confirmed that the use of tablet fostered the opportunities of students' collaboration and engagement and the development of 21st-century skills. Similarly, Larson (2010) found out that electronic texts can make the reading experience more individualized, interactive, and engaging. Besides, Eagleton and Dobler (2007) added that tablets are more advantageous than printed texts as they enable students to physically interact with and manipulate texts and transform them to meet their needs and interests. Likewise, Reinking (2011) stated that tablets could increase the engagement of struggling readers and enhanced their reading comprehension levels.

Despite the increasing demand of the tablet integration in the modern classroom, some researchers had an argumentative view of the effects of smart technology which can be ascribed in specific reasons. For instance, the huge amount of money had been spent in implementing smart technology in schools; however, the effectiveness of digital texts on reading comprehension and motivation at school level has not been fully researched (Wells, 2012; Fisher, Lapp, & Wood, 2011; Mardis & Everhart, 2011). In addition, Bayliss, Connell and Farmer (2012) called for further research about the impact of digital texts in literacy instruction. Larson (2010) added that despite the availability of eBooks, the ways students interact with and respond to these electronic texts are still slight, and even the findings of research studies are conflicting.

Tablet use and integration is still in need of more research efforts to guide the instructional practice. For instance, Cardullo (2013) investigated the experiences of eighth-grade readers as they read nonfiction text on an iPad for academic purposes. She added that the tablets integration in the classroom was a new phenomenon within the academic environment. She also paid attention to the problem which many

schools are experimenting with an iPad that has not been fully integrated into the curriculum. Moreover, Cardullo (2013) stated that according to the Apple Corporation, over 55 million iPads were sold across the globe by 2012 and a large percentage of the global population have engaged in digital reading, this is not necessarily true for adolescent readers. Technologies are evolving faster than researchers can carefully research the literacy demands placed upon the students. It is not clear how the process of digital text impacts the pedagogical practices of literacy, learning, and instruction.

In the USA context, Fox (2014) carried out a study in New York entitled “Effects of Technology on Literacy Skills and Motivation to Read and Write” and found out that technology cannot completely take over the traditional way of reading and writing. In order to use technology to the fullest potential, students must have the basic skills of reading and writing that only the traditional practices can provide them with.

Another critical aspect that may be ignored by educators is that the excessive use of tablets may impact the students’ health badly as it may cause some diseases like cancer, heart disease, high blood pressure and damage to hearing if we use them more than 3 hours a day (Getz, 2012). Since the students’ wellbeing and safety are the top priority of any educational process, such healthy effects need to be regarded seriously before Tablet implementation in classroom.

#### **1.4 Problem Statement**

Despite the importance of reading that is not only synonymous with success at school, but also in life, reading comprehension instruction is still ineffective and the resources used in the classroom are difficult to manipulate and uninteresting for

many students. Moreover, students are not motivated to read well due to their feeling of lack of efficacy and poor reading skills (Al Noursi, 2013).

It has been recognized that the UAE public and private schools' students are experiencing serious difficulties in their reading comprehension which are attributed to the ineffective use of reading comprehension strategies and lack of reading motivation. For example, O'Sullivan (2009) stated the reading problem is rooted in negative prior learning experiences from school in the UAE. Another researcher confirmed the students' poor proficiency. In addition, Mustafa (2002) had extensive interviews with teachers, students, and college instructors in the UAE, and found out that "The school graduates' English reading abilities are extremely poor" (p. 117). He also added "Many Gulf Arab students have a significant 'deficit' in their English language reading skills." (p. 117).

The UAE students had the lowest marks in reading skill as shown in the mean scores of the Standardized TOFEL taken by the UAE students in 2013; The TOEFL IBT scores of reading were 17, Listening 19, Speaking 21 and Writing 19 (TOEFL IBT, 2013). O'Sullivan (2009) also added that UAE nationals got the lowest grade in reading mean scores in IELTS in 2007. In addition, Erguvan (2016) reviewed the mean scores of Arab Gulf students in International English Testing System (IELTS) in 2010 and 2011 and found out that "The mean scores obtained by Gulf students on reading tests were the lowest among 40 countries" (p138). Erguvan (2016) confirmed the serious reading weakness is due to a lack of reading culture in the Gulf society. Maqbool (2015) added that the average Arab child reads 6 minutes a year in comparison to 12,000 minutes his/ her Western counterpart spends reading according to the Arab Thought Foundation's 4th annual cultural development report.

So far the reading difficulties were also reported in the results of Pisa Standardized Test for 2009 that ranked the participating UAE public and private schools' students in reading 44 out of 65 countries (Pisa, 2009).

Stemming from the researcher's 30 year experience in EFL teaching and learning in the UAE context, some students are still weak at reading and their motivation to read is poor. The quantitative data collected by standardized Test (Measures of Academic Progress- MAP) from Northwest Evaluation Association (NWEA) demonstrated that the students had poor reading scores in the English language in comparison with the International American Reading standards. Moreover, the reading mean scores of the seventh grade students in the two private schools were the lowest among other English test items.

Another focal point is that there has been a fever to introduce the tablets in classroom though their effectiveness at school level has not been fully researched locally and globally, especially in elementary and intermediate schools (Wells, 2012; Fisher, Lapp, & Wood, 2011; Mardis & Everhart, 2011).

The present study is a response to the call of Bayliss, Connell and Farmer (2012) for further research on the effectiveness of digital texts in literacy instruction. Moreover, this study is an attempt to fill the gap in the lack of quantitative research in the efficacy of tablet technology integration in reading lessons at the intermediate school level (Wells, 2012; Fisher, Lapp, & Wood, 2011; Mardis & Everhart, 2011).

### **1.5 Purpose of the Study**

The purpose of this research study is to examine the impact of Tablets Digital Texts versus Print Texts on the seventh grade students' Reading Achievements, Reading Strategies and Reading Motivation.

### **1.6 Research Questions**

The study addresses the following five research questions that guide this present study.

#### **Research Question 1**

What are the differences in the reading achievements between the seventh grade students using Print Texts and those using Tablet Digital Texts?

#### **Research Question 2**

What are the differences in the reading comprehension strategies between the seventh grade students using Print Texts and those using Tablet Digital Texts?

#### **Research Question 3**

What are the differences in the reading motivation between the seventh grade students using Print Texts and those using Tablet Digital Texts?

#### **Research Question 4**

What are the correlations between seventh grade students' Reading Achievements, Reading Strategies, and Reading Motivation when they read using Print Texts?

## Research Question 5

What are the correlations between seventh grade students' Reading Achievements, Reading Strategies, and Reading Motivation when they read using Tablet Digital Texts ?

### 1.7 Significance of the Research

This study is important for all stakeholders including students, teachers, reSearchers and decision makers in the field of literacy in general and reading in particular. The study may contribute with some insights to the field of reading inStruction and research, as the reading skill may not rank as high as the other language skills by teachers at the school level. Historically, "Reading has been neglected at the secondary schools level" (Macaro, 2005, p.119).

Since students are experiencing serious difficulties in their reading comprehension strategies and lack of motivation, this study may tackle some of these reading difficulties. It may also be involved in providing solutions and suggestions that help learners better understand English texts and train them to use some supportive reading strategies to be lifelong readers. Besides, this study will give students some suggestions and guidelines about the use of the best reading strategies to improve their reading motivation when using the digital and print texts.

This study may provide some insights about the use of tablets that are strongly desired by students, may reach to the additional degree of re-engaging students as lifelong learners, and may create a student-centered EFL learning environment in the classroom.

For English teachers who are still reluctant to use and fear the smart technology integration, this study will give some examples that demonstrate the

value of tablet integration in enhancing EFL students' reading. In addition, it grants the teachers an opportunity to be acquainted with the barriers and disadvantages of tablet integration in EFL lessons. This helps teachers in the process of tablets use implementation. Moreover, the study tackles the reading motivation that is required to enhance the students' reading performance.

Besides, learners' reporting of their strategy use, especially their cognitive strategy, will help develop teachers' instructional resources and materials that minimize the obstacles and maximize their use of effective strategies.

What makes this study important in the field of educational research is that limited research has been conducted about tablet integration. Firstly, most research studies have been print-based reading ones. Therefore, there is a need for much more research about how students use comprehension strategies in digital reading environments, especially tablet digital texts due to that fact that tablets have been recently introduced to the field of education after 2010 (Fisher, Lapp, & Wood, 2011). Secondly, most of the research on digital reading has focused on college students, but there is little empirical data on reading performance of school students (Wells, 2012; Fisher, Lapp, & Wood, 2011; Mardis & Everhart, 2011). Thirdly, most research studies have been a mixed method or qualitative, but there is little quantitative data on the reading performance of school students (Wells, 2012). In addition, there is lack of research on measuring the impact of tablets on enhancing the students' reading comprehension and increasing their reading motivation (Mardis & Everhart, 2011). Fourthly, most of the studies conducted in the UAE contexts focused only on technology integration not on smart technology integration. Only a pilot quasi-experimental study by Patronis (2014) was carried out in the UAE to examine the impact of the pedagogical potential of integrating the iPad on



undergraduate students' performance in Writing and Reading Comprehension at Zayed University in Dubai.

This study may be of some importance to the UAE Ministry of Education that launched an initiative in the academic year 2013-2014 to integrate tablets in public schools. The target of this initiative is the seven graders on whom this study focuses.

This research study may contribute to the knowledge that is needed for some schools and educational zone administrators in their planning to switch from print to digital format for textbooks.

### **1.8 Limitations of the Study**

This study was limited by some factors: it was carried out on a sample of seventh grade students in two private intermediate schools. The study was also limited to the academic year 2015-2016 and one emirate in the United Arab Emirates. There may be other factors that improve students' reading comprehension like parental involvement and other motivating factors that cannot be controlled. The study was limited by the qualifications and professional expertise of the instructors in implementing and selecting tablet apps. Although the participants studied the same unit included in the same text books and followed the same study plan, but they were taught by different teachers.

Another limitation is that the students might report the perceived reading strategies not the actual strategies they are using.



## **1.9 Identification of Variables**

The independent variables for all the five research questions are reading text formats (a) Print Texts and (b) Tablet Digital Texts.

The dependent variable for Research Question One is the reading achievements scores as measured by Reading Achievements Test.

The dependent variable for Research Question Two is the reading strategies that include three subscales (Global Reading Strategies, Problem Solving Reading Strategies and Support Reading Strategies). This dependent variable is measured by the mean scores and standard deviations obtained by “Survey of Reading Strategies, SORS” prepared by Mokhatri & Sherory (2001).

The dependent variable for Research Question Three is the reading motivation identified by the mean scores and standard deviations obtained by the Survey of Reading Motivation as shown in Appendix D. The reading motivation comprises of five subscales including Reading Efficacy Values (RE), Attainment Values (AV), Intrinsic Values (IV), Extrinsic Values (EV) and Engagement Values (ENV). The constructs of the reading motivation are shown in Appendix R.

## **1.10 Operational Definitions**

This study is connected to the following terms, concepts, and key words.

### **1.10.1 Tablet Digital Texts**

They are defined as texts published in electronic interactive format that could be delivered by tablets for the purpose of this research study.

### **1.10.2 Print Texts**

They are defined as reading texts presented in paper format for the purpose of this research study.

### **1.10.3 Reading Achievements**

It is the reading score obtained by seventh grade students in reading print and digital texts as measured by Reading Achievements Test.

### **1.10.4 Reading Strategies**

For the purpose of the study, the reading strategies are defined by the mean scores obtained by Survey of Reading Strategies (SORS) in the three subscales (Global Reading Strategies, Problem Solving Reading Strategies, and Support Reading Strategies).

### **1.10.5 Reading Motivation**

For the purpose of this study, Reading Motivation is defined by the scores obtained from the Survey of Reading Motivation in the five subscales including Reading Efficacy Value (RE), Attainment Values (AV), Intrinsic Values (IV), Extrinsic Values (EV) and Engagement Values (ENV).

## **1.11 Organization of the Study**

The first chapter includes an introduction of the topic of study, its background and context, problem statement, purpose of the study, its significance and the definitions of the key terms. The second chapter addresses theoretical framework of the study including the Sociocultural Theory, Models of Reading in L2, New Literacies, Transactional Theory, and Motivational theories as well as reviews of the recent studies in different contexts. The third chapter describes the methodology of how data will be collected, analyzed and presented including, the materials used in

the study. Then, the design, settings, population, participants, and sampling are stated. In addition, the three instruments used in this study are introduced with their validity and reliability. Next, the data collection and analysis procedures to conduct the present study were explained. The fourth chapter presents the results of the five research questions. The fifth chapter concludes the research study by discussing the results in light of literature and relevant studies. It also offers some suggestions and recommendations based on the results.

### **1.12 Chapter Summary**

This chapter introduced the research topic and highlights the major themes related to the background study of English as Foreign Language (EFL) literacy, the reading achievements, reading strategies, and reading motivation. It also discussed the EFL literacy within the context of the United Arab Emirates and beyond. Moreover, the research problem of students who have experienced serious difficulties in their reading skills was presented thoroughly. Besides, the purpose of the study was set and the five research questions were addressed. Furthermore, the significance and the limitations of the study were highlighted. In addition, the independent variables (Print Texts and Tablet Digital Texts) and the dependent variables (Reading Achievements, Reading Strategies, and Reading Motivation) were identified and operationally defined. Finally, a plan of the entire research study organization was stated.

## **Chapter 2 : Literature Review**

### **2.1 Introduction**

The main objective of this chapter is to review the literature that deals with educational and theoretical issues related to the topic and the major variables of this research study. This review of literature includes the theoretical background, framework and research efforts that present this study's variables from different perspectives in order to reflect the entire picture. The main variables include tablet digital texts, print texts, reading achievements, reading strategies and reading motivation.

This chapter is divided into two major sections. The first section reviews the theoretical framework that guides this study and forms an umbrella for instructional, pedagogical, psychological, linguistic and technological aspects that are important to the reading process. The second section covers some topics supported by evidence from research to deal with the main variables of the study like tablet integration in the classroom, advantages and disadvantages of digital and print texts, technology integration in teaching reading, reading comprehension strategies and reading motivation. These topics are supported by relevant, previous research studies that have carefully examined them in various contexts.

### **2.2 Theoretical Framework**

It is very important to examine the theories and models that are relevant to the process of reading achievements, reading strategies and reading motivation as they help to explain the topics related to the study more deeply and present insights that help in analyzing and interpreting the findings. The study includes theories and

models like the Sociocultural Theory, Models of Reading in L2, New Literacies, Transactional Theory, and Motivational theories that serve as a theoretical framework needed to explain and understand instructional, pedagogical, psychological, linguistic and technological facts related to the study.

### **2.2.1 The Sociocultural Theory**

The sociocultural learning theory emphasizes the social factors in the process of learning that is not an individualistic process, and it needs to be learned in a social context with the help of peers and teachers (Yang & Wilson, 2006). Additionally, the sociocultural theory states that learning occurs in a sociocultural environment, and it views a learner's role as an active constructor of his/her own learning environments (Johnson, 2006). Although the sociocultural theory is concerned with the cognitive development of the learner, it is important to note that it focuses a great deal on social factors and social interaction with other knowledgeable peers that facilitate the cognitive development.

From the perspective of sociocultural theory, reading is a social skill that requires an active participation and interaction of the learners involved in it (Compernelle & Williams, 2011). Clearly, reading has changed in the last decade due to the progress in digital technology that has introduced opportunities for reading digital texts; however, the purpose for reading both print texts and digital texts has remained the same. For this reason, this study focuses on the impact of tablet digital texts versus print texts on EFL learners' reading comprehension achievements and effective reading strategies in order to explore whether there are differences and similarities between them.

The frequent use of the tablets has formed the basis for social interaction among

many students. Using tablets fosters collaboration among students through meaningful conversations that enable them to make comments on each other's work and to ask questions. In a large number of studies, students worked with the tablets in a two-to-one ratio. In those cases, the partners worked together to accomplish their learning tasks in productive ways (Leu et al., 2004).

This study aims to compare and contrast how students construct meaning while reading digital and print texts. Pearman (2008) discussed meaning construction and stated that constructing comprehension and understanding while reading is "comprehension of written message" (p. 601). This is mainly built upon sociocultural theory which states that the characteristics of the reader can determine the way children learn to read. Some of these characteristics are stance, language, prior knowledge, and experiences that arise when the reader and the text interact. They impact the transactional process of the reading experience (Vygotsky, 1978).

What makes sociocultural theory important to this study is that learning starts to take place socially and culturally within the context of new literacies. The knowledge's construction started to have increased reliance on social learning that results from the dramatic progress in the digital technology and means of communication (Leu et al., 2004). In other words, digital technology and communication are believed to enhance learning that is social practices.

### **2.2.2 Models of Reading in L2**

Reading models are important for teachers, students, and researchers as they enable them to understand the reading process deeply. This contributes to the enhancement of teaching and learning. Reading models highlight how

comprehension can occur and what strategies can improve students' reading processes.

Reading models in L2 in the 1950s and 1960s were based upon models of reading in L1. Reading models in that era were classified to cognitive or metacognitive domains. The cognitive aspect is concerned with how a word is decoded and perceived by the readers' brain while the metacognitive aspect involves in how the whole text is accessed and its meaning is comprehended (Macaro, 2005).

In the progression of the models, word recognition emerged in the 1970s; however, the subsequent model focused on the surface form of language rather than deep meaning. As a result of its limited focus on surface structure, word recognition paved the road for a bottom-up model which conceptualizes reading as a process of the reader's decoding the text which is, in turn, encoded by the writer (Macaro, 2005). In this model, readers are viewed as passive recipients of information in the text (Dole et al., 1991). In other words, meaning resides in the text and the reader is required to reproduce meaning (Nunan, 1991). It is a reading model that emphasizes the written or printed text. It also emphasizes the ability to decode or put into sound what is seen in the text (Macaro, 2005).

The second wave of models was a top-down model that conceptualizes meaning in the opposite direction of the bottom up model. Understanding of meaning is gained when the reader activates prior knowledge in semantic, pragmatic, syntactic and discourse aspects (Nunan, 1991; Dubin & Bycina, 1991). The main focus of this model is the reader rather than the text. The reader can construct meaning and is able to bring meaning to text as a result. This reading model is known as a cognitive model where reading is described as "a psycholinguistic guessing game" (Goodman,



1967, p.126). This process causes readers to sample the text, make hypotheses, confirm or reject them, make new hypotheses, and so forth (Macaro, 2005).

The interactive model is known as a metacognitive model, and it has dominated the field of L2 reading research for some time (Macaro, 2005). It is the combination of the two reading models: the bottom up model that represents the lower levels of reading and the top down model that represents the higher levels of reading. Readers depend on reading purpose, reading motivation, schema and knowledge of the subject. The interactive model has the following features.

(a) It involves thinking about what one is doing while reading; (b) It identifies the purpose of the reading before reading begins. (c) It identifies the form or type of the text before reading; (d) It uses different strategies like choosing, scanning, or reading in detail, making continuous predictions about what will occur next, based on information obtained earlier, prior knowledge, and conclusions obtained within previous stages (Macaro, 2005).

The reading models in L2 are very important to this study as they provide insights that contribute to deepening an understanding of the reading process. They highlight how reading comprehension can occur and what metacognitive and cognitive strategies can improve students' reading processes. The reading models in general and the interactive model in particular form the theoretical framework that guides the reading process. They also guide the five variables (tablet digital texts, print texts, reading achievements, metacognitive reading strategies and reading motivation) which are under investigation in this study.



### 2.2.3 New Literacies Theory

New literacy represents a new tradition to think of Literacy as a social practice not focusing on skills' acquisition. This crystalizes the concept of multiple literacies that vary according to time, place and the power of culture (Gee, 1991; Street, 1994).

Street (1995) stated that the concept of multiple literacies makes a distinction between "autonomous" and "ideological" models of Literacy, and later he developed a distinction between literacy events and literacy practices (Street, 1984). In addition, two models of Literacy tackled the autonomous model and alternative model. The autonomous model is simply imposing Western conceptions of literacy onto other cultures, while the alternative model of literacy represents more culturally sensitive view of literacy practices that vary from one context to another (Street, 2001).

This theory guides this research and is considered the theoretical perspective of smart digital technology. In response to dramatic change towards smart technology, literacy is in need of redefinition. Leu (2002) stated that there are so many possibilities for Literacy in such a short period of time. In addition, there has been a shift from print text to digital screen or text. The form and function of literacy have changed. Leu (2001) stated that literacy is not static print in a text; it has become more dynamic and interactive in a digital text. The concept of New Literacies is theoretically framed by many theories, like sociocultural theory, cognitive theory and information theory. The major principle of New Literacies is that the complexity of literacy practices changed the way of comprehending the world (Coiro, 2003a). In addition, the basic literacies are not sufficient to fully use the internet as a reading and writing communication tool, and researchers need to

find multiple perspectives. Thus, a dual- Level theory of new literacy emerged (Leu et al. 2004). “New Literacies” and “new literacies.” “New Literacies” is an umbrella for the all new literacies (Leu et al, 2004).

“New Literacies” is based upon basic literacies including word recognition, comprehension, inference and reasoning. The model of New Literacies includes multimodal literacies in digital environments. Many researchers have connected theoretical framework and adapted well-known previous strategies to forge pathways into digital reading comprehension environments (Zang & Duke, 2008). New Literacy is used as the theoretical framework to help explain any emerging results from this study as an outcome of reading via digital texts.

#### **2.2.4 Transactional Theory**

Transactional theory suggests a reciprocal relationship between the reader and the literary text (Rosenblatt, 1995). Rosenblatt (1995) also argues that the text is simply ink on paper until a reader comes along. Thus, this theory places a great deal of emphasis on the role of the reader. It requires us:

To see the reading act as an event involving a particular individual and a particular text, happening at a particular time, under particular circumstances, in a particular social and cultural setting, and as part of the ongoing life of the individual and the group (Rosenblatt, 1985, p.96).

Transactional theory offers several assumptions such as the meaning is within the reader, created in the act of reading, rather than in the text. Readers create their understandings of the text by regarding and examining their responses, emotions, associations, memories, images, and ideas. Students also are encouraged to work

cooperatively to enter into a "reciprocal, mutually defining relationship" in their discussions with students and teachers, as well as in their readings of texts.

The meaning is produced in transactions that occur between the reader and the text and the ability (Leu et al., 2004). Thus, the relationship between technology and literacy is transactional. In addition, the digital text is interactive and engaging and this will make students more engaged and having a more active role in reading. Meaning is constructed during the transaction and interaction between the text and the reader. It is clear that according to Reinking (2011) both technology and literature transform the form and function of one another.

Transactional Theory gains its importance in this study as it is based upon the fact that meaning is constructed by the transactions between the reader and the digital or print texts. For example, Wegmann (2010) stated that Literacy is the state of being able to participate fully in a to-and-fro interplay between the reader and the text. Text structure is a basic factor in the investigation of reading comprehension for print text. In addition, the multidimensional text structure is also important to investigate the reading comprehension of digital text. Furthermore, McEneaney (2002) stated that readers might experience three kinds of structures: text structure, virtual structure, and emergent structure of multiple readers. The process of transaction between a reader, a text and the tools to construct the meaning from the same text depends on the experience, language and prior knowledge of the reader. Literacy and technological devices transact in various ways that have mutual effects on one another (Leu, 2000).

Regarding the tablet digital texts, it is used for a multitude of different Literacy needs in terms of form and function. Since the relationship between Literacy

and technology is transactional, the transactional theory's concept is applied to explore the transaction between the reader, the text, and the tool.

### **2.2.5 Metacognition**

This process, which has influenced this research study as cognitive and aesthetic shift from print to digital text, presents new challenges to students' reading comprehension. In addition, the process of reading comprehension is complicated because learners need to think meta-cognitively about the cognitive process while reading (Baker, 2002).

Metacognition is a process described by Flavell (1976) as deliberate, conscious, foresighted, and purposeful. It is also directed at achieving an outcome and guides a reader as he/she thinks through a problem, and makes strategic decisions to solve it while reading.

Researchers emphasized the role of metacognitive skills involved in reading such as setting the purpose of reading, identifying the basic aspects of the text, comprehension monitoring activities, self-questioning, and taking corrective actions in case of comprehension failure (Mokhtari & Reichrad, 2002). Since comprehension is the core element in description of any reading process, the need for comprehension monitoring is required to enable the reader to judge whether comprehension is occurring so as to help the reader to take compensatory or corrective action when it is necessary (Casanave, 1988).

Metacognitive knowledge is significant as it makes thinking visible to a learner to achieve his learning outcome. It helps readers to understand what the mind is cognitively doing during reading; thus, improving cognition by exerting metacognitive control over learning and reading as well. In fact, Hartman et al (2010)

stated that strategic reading needs three types of knowledge that are declarative, procedural, and conditional. However, students need to develop additional metacognitive strategies while dealing with digital texts such as hyperlinks, graphs, charts, and videos. Such types of digital texts may distract poor readers and good readers as well.

Some researchers found out that there was a positive relationship between metacognitive strategies and reading comprehension. In addition, the strategies which readers use when interacting with print texts play an important role in improving reading comprehension. Also, the more various strategies a reader uses, the more successful he/she will be at reading and understanding the reading text. Moreover, the use of reading strategies will improve reading comprehension (Carrell, 1989; Garner, 1987; Pressley & Afflerbach, 1995; Block, 1992).

In fact, the awareness of the metacognitive reading strategies can enable students to construct meaning from the text and be thoughtfully and constructively responsive to the process of reading (Sheorey & Mokhtari, 2001). Thus, teaching the reading strategies and incorporating them in the curriculum help students as readers to acquire these strategies unconsciously in a way that fosters their comprehension levels and their language proficiency. The strategy teaching has been found out that it had positive effects on the students' thinking skills and reading performance. It is also beneficial to raise the students' awareness of the frequent usage of the proper and effective strategies when reading in English (Cavalry, et al., 2004).

In contrast, few researchers like Zhang (2001), found out that the impact of the awareness of reading strategies was negative on the improvement of learners' language proficiency and their reading comprehension.

Reading in the digital environment moves readers beyond simple reading strategies like skimming and scanning to be engaged in a complex metacognitive process that needs analysis, evaluation, and meaning inference of text driven by the author.

It has been noticed that very little research carried out on the Metacognitive knowledge and reading strategies in digital context, so this study may help to better understand how students read digital and print texts.

### **2.2.6 Motivational Theories**

Motivation plays a critical role in Language learning as emphasized by (Dömyei, 2005) who stated that motivation is “Sustained process of mastering an L2” (p.616). Motivation refers to “the reasons underlying behavior” (Guay et al., 2010, p. 712). Thus it is broadly defined by Gredler, Broussard and Garrison (2004) as “The attribute that moves us to do or not to do something” (p.106). Motivation can focus on cognitive behaviors (e.g. monitoring and strategy use), non-cognitive aspects (e.g. perceptions, and attitudes). For instance, Gottfried (1990) defines learning motivation as “Enjoyment of school learning characterized by a mastery orientation; curiosity; persistence and the learning of challenging and difficult tasks” (p. 525). In contrast, Turner (2011) defined motivation as a cognitive engagement “Voluntary uses of high-level self-regulated learning strategies, such as paying attention, connection, planning, and monitoring” (p. 413).

Motivation is also defined by Pintrich and Schu Pierce (2003) as ‘a process whereby goal-directed activity is instigated and sustained’ (p.5). In addition, McCullagh (2005) defined motivation as the intensity (quantity) and direction of

effort; he also confirmed that motivation promotes learning, performance, enjoyment, and persistence.

The concept of motivation is tackled profoundly by other researchers. For instance, Dornyei (2010) stated that second language learning motivation is divided into two key dimensions. The first one is integrative motivation that refers to the desire to learn a second language of a valued community, so that one can communicate and engage with this community members and sometimes even to become like them. The second is instrumental motivation that is related to the concrete gains that language proficiency might bring about (e.g. job opportunities, increased salary). Thus, we learn the language as we like its speakers or and because we believe it is beneficial for us and our future career or study. In the context of this study, it is supposed both integrative and instrumental dimensions are available, and English language is highly regarded.

Similarly, Gardner (2005) discussed the nature and effect of instrumental motivation, and Gardner (2005) used the term "Integrativeness" that reflects a genuine interest in learning the second language so as to come closer to the other language community members. This implies an openness to, and respect for other cultural groups and life styles. Moreover, Gardner (2005) stated that motivation is a complex concept that engages cognitive, affective and behavioral components. Its essence is integrative and cannot be captured by only one aspect.

Reading motivation is characterized as "the individual's personal goals, values, and beliefs with regard to the topics, processes, and outcomes of reading" (Guthrie & Wigfield, 2000, p. 405). Reading motivation is a complex construct comprised of multiple dimensions (Guthrie & Coddington, 2009).



The present study conceives motivation in terms of five different measures. One of these constructs is self-efficacy that is a central construct within the framework of social cognitive theory (Bandura, 1997). Self-efficacy is defined as "people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events" (Bandura, 2001, p. 10). While, reading self-efficacy is defined as "beliefs regarding ability and proficiency in reading tasks" (Chapman & Tunmer, 1995, p. 154).

Reading efficacy has often been defined in narrow ways. For instance, it was measured as students' score on a test or a grade in language arts. Such definition does not always provide a complete picture of the multiple ways that reading proficiency can manifest in a student's behavior. Thus, including a behavioral measure of reading performance is more beneficial, as it provides an entire picture of students' reading behaviors (Chapman & Tunmer, 1995).

Attainment Values is viewed as the importance of doing well on a given task. This value incorporates identity issues: tasks are important when individuals view them as central to their own sense of themselves, or allow them to express or confirm important aspects of self (Eccles et al, 1983). Attainment values are also tied to the integrated regulation construct in self-determination theory that refers to integrating one's actions so that they are coherent with the individual's sense of self and goals (Ryan & Deci, 2004). Reading attainment value is associated with the reader's perception of significance of success in a given task and how important a reading task is to his/her self-schema or identity (Eccles and Wigfield, 1995).

Reading engagement is the third construct of the reading motivation tackled in the present study. It is important as it may make the most difference in students' comprehension and increase their ability to work hard and focus while participating



in different reading tasks and activities (Wood & Blanton, 2009). Motivation is perceived when students possess:

The desire, reason, and predisposition to become involved with a task or activity,” while engagement refers “to the degree to which a student processes [the activity or] the task deeply through the use of active strategies and thought processes and prior knowledge (Kamil et al., 2008, p. 26).

The other constructs are intrinsic and extrinsic values. The intrinsic motivation is based on an internal drive to pursue tasks for satisfaction; it also comes from inside an individual. When students are motivated by outside and factors, like rewards or deadlines, this is called extrinsic motivation that is governed by reinforcement contingencies (Ryan & Deci, 2000). Moreover, Deci et al., (1999) also emphasized “Intrinsic motivation energizes and sustains activities through the spontaneous satisfactions inherent in effective volitional action. It is manifest in behaviors such as play, exploration, and challenge seeking that people often do for external rewards” (p. 658).

Although the intrinsic motivation is more desirable as it results in better learning outcome and achievements than extrinsic motivation, it is important to highlight that motivation regardless of its type is critical to foster reading either digital or print texts. A reader is in need of motivation, and what motivates a learner to read is knowing how to read (Cooper, Chard, & Kiger, 2006). In addition, Robb (2013) found motivation to read influences a reader’s tenacity in reading and students who cannot read are often demotivated. Robb (2013) also stated that students that have higher motivation are also more likely to apply the use of comprehension strategies while reading. Guthrie (2004) suggested some ideas to help increase motivation in reading: (a) A variety of themes. (b) Focus on student choice

for reading texts and responses. (c) The variety of activities (d) The availability of a wide variety of text genres chosen to interest students. (e) The integration of social collaboration into reading response activities (Guthrie, 2004).

This study attempts to explore which motivation values can be supportive to the students in their reading achievements and which values are desired by the students when reading the digital texts and print texts.

After discussing the theoretical framework of the study, it is beneficial to shed some light on the other themes that form the main variables of the study like tablets integration, digital and print texts, reading achievements, reading comprehension strategies and reading motivation.

### **2.3 Reading Comprehension**

The skill of reading is like a muscle that needs practice and training, the more you train the more speed you gain (Samuels & Farstrup, 2011). Thus, the use of tablets will grant the students more time to practice and become independent readers.

Reading Comprehension is considered the major objective of reading instruction. It is also simply defined as the reader's ability to construct meaning from the text. Additionally, the process of comprehension can be regarded as an interactive process of meaning construction in which the readers make use of their prior knowledge and the author's text to comprehend the text. Moreover, the process of reading comprehension needs mastery of the basic reading foundations and skills like phonemic awareness, phonics, fluency, vocabulary, and background knowledge (Tompkins, 2013).

Reading comprehension is as the level of understanding of a text either it is in a digital form or a print form. This understanding comes from the interaction

between the words that are written, and how they trigger knowledge outside the text as well as with the reader's prior knowledge. In order to comprehend how students take up reading strategies when they deal with texts, it is essential to understand the constituent reading process which shapes and is shaped by readers' use of strategies and metacognition. Kintsch (1988) clarified that the Construction-Integration Model of Text Comprehension best describes the reading comprehension process as the interaction of the text base and the situation model. Kintsch (1988) added that a reader develops a text base from propositions clearly stated in text. Moreover, to create a text base, a reader has to construct a mental representation that integrates the reader's background knowledge and goals with the reader's current rehearsal of the text (Kintsch, 1988). Constructing a situation model enables the reader to find a place in memory to store new understanding and retrieve it later for future applications (Kintsch, 2005).

## **2.4 Technology and Reading Strategies**

Strategies are considered as behaviors that a reader uses to proceed through a text and engage in purposeful production to construct the meaning. A reader has to exert efforts, energy and resources to engage in using a strategy (Gardner, 1987).

The strategy has six attributes which are essential, effortful, purposeful, procedural, willful, and facilitative. All of these attributes of behavior show that the reader should cognitively determine the type of strategies required to process the reading task (Alexander, Graham, & Harris, 1998).

It is important to identify strategies which guide readers while approaching both digital and print texts. Comprehension is more likely to happen when students remain focused on both their task and text. Pressley and Afflerbach (1995) stated that

the successful readers usually use diverse strategies, and they identified thirty two strategies which appear to contribute to successful reading and characterize effective reading. The researcher thinks that the impetus for this research is to identify the strategies used by readers when reading print and digital texts.

Some researchers like Anderson-Inman and Horney (1994) analyzed hypertext and determined six possible reading strategies used by learners which are skimming, checking, reading, responding, studying, and reviewing. While Britt and Gabrys (2001) identified strategies “advanced literacy skills” (p.74) including sourcing, corroborating, integrating to link new information to the old information.

It is beneficial to question if readers can transfer those strategies from print text to digital one. McNamara & Shapiro (2005) concluded, “The complexities of learning from linear text and hypertext are similar to those associated with general knowledge and skill acquisition” (p.21). Some reading strategies are applied to digital and print texts, while others may be more appropriate to one only. Elshair (2002) called for more research on both digital texts and print texts concurrently.

Students should be taught how to implement effective reading comprehension strategies like predications, inferences, asking questions about the text, summarizing, making an outline, making connections, and activating prior knowledge (Tompkins, 2011). In this regard, Tompkins (2013) examined the effective strategies to teach reading and writing and concluded that both reading and writing are a “parallel process of meaning construction”. In addition, students, while reading and writing, use similar strategies for constructing meaning of text. The researcher recommended incorporating both writing and reading strategies when planning EFL reading and writing lessons (Tompkins, 2013).

The present research study highlights three categories of Metacognitive Reading Strategies including Global Reading Strategies, Problem-Solving Strategies and Support Strategies. Those strategies assist EFL learners to enhance reading comprehension and increase his/her reading comprehension score (Mokhtari & Sheorey, 2001). The first category is "Global Reading Strategies" that are purposeful and planned techniques used by readers to manage their reading. It refers to pre-reading activities such as, having a purpose in mind before reading and thinking about what one already knows about the material before reading (Mokhtari & Sheorey, 2001). The second category is "Problem-Solving Strategies" that include functions and manners that readers use when they meet difficulties in comprehending textual information. It refers to functions such as rereading hard to understand text and adapting one's reading rate to the difficulty level of what they are reading (Mokhtari & Sheorey, 2001). The third category is "Support Reading Strategies" that are additional strategies that include taking notes while reading to assist in understanding, reading aloud to assist in understanding, underlining or mark-up information in the text to assist in remembering, using references, paraphrasing to better understand, going back and forth in the text to find relationships among ideas and asking self-questions to find answers in the text. These strategies are used during and after reading (Mokhtari & Sheorey, 2001).

## **2.5 Reading Achievements and Technology**

Technology integration with its various resources enriches learning and teaching environment that results in increasing the effectiveness of teachers in the EFL classroom and students' learning outcome and achievements. For example, Pollitt (2013) emphasized that the tablet, with its instructional applications, software

and accessibility, is a transformative classroom tool; Pollitt (2013) added that the tablet can be exploited to improve student outcomes and foster his/her Literacy skills due to its significant face validity; its power to engage students by making learning fun as well as displaying content knowledge in a multitude of formats. In addition, Hu (2011) stated that the tablet is an effective tool that provides appropriate classroom instruction to students in general and students with special needs in particular. Thus, tablets integration can meet the differentiated needs of the students and improve their attainment. This is also emphasized by Couse and Chen (2010) who concluded that the appropriate use of technology would cater to the diverse learning styles of the students and increase their achievements.

Some researchers stated that the use of tablets improved instruction, met the students' learning styles, and personal needs and enhanced achievements (Hansen & Borthwick, 2012). One of these studies carried out in one school in Auburn to investigate the effects of an iPad program and study concluded that students who used the iPad had gained greater scores than those used print texts (Bebell, Dorris, & Muir, 2012).

Another study conducted by Roblyer and Doering (2013) emphasized that technology integration such as iPads and other devices are effective in helping boost students' reading achievements and reading comprehension. They can help students transfer the knowledge in their short-term memory into their long-term memory (Smaldino, Lowther, & Russell, 2012).

A recent study carried out by Beimers (2014) confirmed the results of the studies formerly tackled by highlighting some benefits of implementing tablets in classrooms. For instance, the iPad literacy based applications raise a student motivation, and increases their levels of engagement. Then, the iPad's mobile design



features make it a practical tool to foster literacy instruction. Next, the literacy-based Apps of tablets are effective tools for differentiating instruction and learning as well. Also, the use of tablets reinforces communication and collaboration among students. Consequently, content and design of iPad app can effectively increase Literacy achievements.

In the South Africa context, Dreyer and Nel (2003) carried out a research study that outlined the format and structure of a strategic reading instruction component offered within a technology enhanced environment. The researcher found out that EFL students who received technology based instruction showed a significant improvement in reading comprehension achievements.

## **2.6 Relevant Research Studies on Technology and Reading**

Tablets are considered effective instructional tools whose functions and applications can be reflected positively on the students' reading proficiency and enhances students' self-esteem, confidence and enthusiasm. These positive effects were emphasized in some studies in different context. In the UAE context, Patronis (2014) carried out a pilot quasi-experimental study to examine the impact of the pedagogical potential of integrating the iPad on undergraduate students' performance in writing and reading Comprehension at Zayed University in Dubai. Patronis (2014) sampled 77 undergraduate students who responded to a questionnaire. Most students strongly felt that the iPad could help them in their reading and writing performance. However, their reading and writing standardized test results had no significant positive impact on their performance.

In the USA context, Reichenberg (2014) conducted a quasi-experimental, nonrandom, pretest/posttest control group study in Lynchburg. He carried out the

experiment to explore the impact of Apple iPad on reading comprehension skills of second grade students. The findings showed significant difference in the second graders' reading comprehension scores between the students using eBooks and those using print texts in favor of the first group.

Reading digital texts has positive effects on the engagement level of both the struggling reader and non-struggling reader. For instance, it increases the duration of reading that results in enhancing the reading proficiency and enabling student to be better readers (Larson, 2010). Students could use the functions of the digital readers to help them comprehend the text. These functions comprise digital dictionaries, the text-to-speech features that enable the users to listen to words and reread text, and adjusting the font size. Larson (2010) found out that students preferred reading on the digital reader to traditional methods. He added that the participants in his study were more confident and more enthusiastic when reading digital texts.

Theormer and Williams (2012) confirmed the results of Larson's (2010) study regarding the role of interactive features of mobile technology. They stated that the features of digital text increase students' self-esteem and help students comprehend the text more easily. In addition, Bennett (2011) stated that tablet is more advantageous than print texts in its interactivity and accessibility to enrich instructional resources that enhance Literacy skills.

In the United States of America context, some quasi-experimental studies were carried out to investigate the effect of computer technology on reading comprehension. A research study was conducted in Calhoun County High School in Michigan by Jones et al. (2005) examined the effects of Merit Reading Software on reading. The students in both groups read the same texts, but the tablet digital texts group used the software, while the print texts group did similar work using the print



texts. The results showed significant differences in the reading scores of the students in favor of students using the software reading program. They concluded that the use of digital texts can improve reading comprehension.

Another study conducted by O'Connell, Freed and Rothberg (2010) recorded some benefits of smart technologies in Literacy practices. One example is the use of the iPod Touch devices to improve their students' reading fluency. This can be done by using recording applications to record their reading and listened to these recorded materials to increase their fluency. A second example is using the flash card application with images and animation to learn vocabulary. A third example is using the iPod's video capabilities to create videos for modeling reading. The study found out that the iPod Touch, as well as the new iPad, could help to assist students with disabilities in their reading fluency.

In one qualitative research study, Hutchison et al. (2012) explored how the iPad applications grant opportunities to students to acquire new literacy skills related to the 21<sup>st</sup> century technologies. They found that it is beneficial to integrate technology into the Language Arts classroom to enhance 21<sup>st</sup> century skills like communication, collaboration, creativity and critical thinking that enable students to compete in today's changing world. Wellings and Levine (2010) also found that smart technology is beneficial for differentiating instruction and increasing the students' achievements and engagement, especially in language lesson

In addition, increasing students' reading fluency needs engaging instructional methods that can be provided by effective use of iPad applications (Thoermer & Williams, 2012). There is a need of exposing students to rich and varied fluent models to support reading fluency. This can be done easily by asking students to model their reading after the read-aloud.

Another pretest- posttest quasi-experiment was conducted at a middle school in California by Traynor (2003) to investigate the impact of Cornerstone Software program on reading comprehension of different students. 210 Language Arts students were classified into tablet digital texts group and print texts group. The tablet digital texts group used the computer-based program, while the print texts group received print texts in reading classes. The results showed significant differences in reading achievements in favor of students using the computer-based program.

Similarly, Strangman and Daltong (2005) reviewed some studies on implementing technology to overcome reading difficulties and emphasized the importance of using computer technologies to eliminate reading difficulties. They added that technology is a valuable resource of supplementary teaching methods and can enhance the students' learning by providing them with authentic context to learn the language and support their individual learning profiles.

There has been a large scale initiative campaign in different American States to invest public billions of dollars in iPad as a unique smart device and to implement it to enhance teaching and learning as well as prepare students for the Common Core State Standards (Zouves, 2012; Broden, 2013; Fagan, 2013; Bernier, 2013; Zouves, 2012; Findell, 2013; Virginia Department of Education, 2012).

Ojalvo (2010) shared teachers' thoughts on how technology is changing the way teachers are teaching. The shift from teachers changing their viewpoints to meet the needs of their students in this ever-changing world with technology results in gains in comprehension.

In the Turkish context, a quantitative study conducted by Ertem (2010) to examine the differences in struggling readers' comprehension. Seventy seven fourth grade students were sampled and divided into three groups: one group used computer

presentation of storybooks with animation; the second without animation; and the third used print storybooks. The findings of the study displayed a significant increase in reading comprehension when students were engaged in digital texts which incorporated animations in comparison to those who were engaged in the print texts. The results of the research also indicated that digital interactive texts can improve students' reading comprehension and is beneficial for struggling readers.

## **2.7 Tablet Integration in Classroom**

Tablet integration in the English Language classroom is beneficial as it increases students' engagement and provides rich instructional resources that fosters the students' literacy skills. These resources help to create authentic context of the English language classroom. Additionally, technology integration in the classroom may participate in overcoming the students' reading difficulties and challenges as stated in the research problem. The weakness of the students in reading is also confirmed by National Center for Education Statistics (NCES, 2010). It was reported that about 70% of high school students are not "proficient" in reading skills on the National Assessment of Educational Progress and the report added that reading classes did not pay more attention to weak readers and their specific reading skills.

The current decade has witnessed a major shift in integrating smart technology in classroom to meet the students' Literacy needs who are surrounded with digital smart devices and living in an era requiring digital Literacy skills, in which they research, proceed, examine and evaluate data (Ekkers, 2014). In addition, the tablet integration into the classroom has become a vital necessity in our modern society, not just a popular craze. Thus, schools need to respond and start integrating smart technology so as to achieve a higher quality of academic classwork (Vu, 2013).

Smart mobile technology opens new avenues to find information and demands new higher thinking skills to evaluate and assess information. It changes the life styles of the people and how they are functioning in society and in schools. This resulted in the availability of information at any time and place (Barron et al, 2012).

In fact, smart mobile technology is beneficial in the Language Arts classroom. Teachers can exploit many applications and interactive features such as using digital stories, e-books, and digital writing activities to enrich their classrooms (Larson, 2010).

The necessity of the process of smart technology integration in classroom stems from its wide use in society. Sprenger (2009) found out that students stayed about six hours a day connected to a digital communication device. As a result, schools need to respond and design their programs and curricula in a way that goes in line with the dramatic digital smart technology as confirmed by Johnson, Adams, and Haywood (2011).

The 21<sup>st</sup> century students have become digitally native and need to be taught by digital technologies that need to be integrated into the classroom to avoid mismatch between what is happening in school and in society; moreover, technology integration increases the students' achievements and their motivation (Puerling, 2012; Smaldino, Lowther, & Russell, 2012).

Tablet integration in the classroom is spreading in large numbers all over the world and the wide use of smart technology reshapes the way of instruction. What encourages to integrate tablets in classroom is that tablets are very practical in classroom since they are portable, store references, dictionaries, record observations, access educational sources ; they are cost affordable and cheaper than print books (Puerling, 2012; Smaldino, Lowther, & Russell, 2012).

Tablets are very effective in language learning as they help the reader to listen to texts that they are unable to read through some applications. They also enhance communication and connection with native speakers and expand the time of learning.

In the USA context, a research study conducted in a middle school in North Carolina, the school integrated the iPod Touch that is similar to iPads in many features into the classroom. Crompton, Goodhand, and Wells (2011) found that the teachers were satisfied at the implementation in the classroom. The teachers were asked for reflections on how the devices worked in the classroom environment, and they revealed that students were enthusiastic about using the devices that kept them absorbed in their learning.

## **2.8 Print Texts and Digital Texts**

Despite the widespread use of digital texts, there are still some students who prefer using special features accompanying print texts rather than those are incorporated into digital texts and they prefer reading print texts (Woody et. al., 2010). They added that the degree of preference is different from context to another and from age to another. Additionally, they reported that three fourths of students prefer print texts to digital ones. Other studies stated that the preference of digital or print text is correlated with the age. Studies like Kang et al (2009) stated that the new generation prefers the digital books while the older one prefers the print texts and find it difficult to adjust to the digital texts.

Print texts and digital texts are different in some aspects. For instance, print texts are linear and read from left-to-right while the digital texts are multi-linear as it does not have a front from which to start or a back at which to end. In addition, the

print text reading path is fixed; however, the digital text path is not fixed and unpredictable (Kymes, 2007). Another important difference is that multiple areas of interactivity that the hyper texts offer to readers. Kymes (2007) added that the information of print text are constrained, standardized, and verified. In contrast, hypertext information are often trust worthy, unconstrained and sometimes a source of misinformation. The dramatic progress in smart technology and digital texts has made large demands on literacy skills, and the complexities of learning to read on and with the new digital texts (Snow, 2002; Kress, 2003).

Reinking (2011) confirmed that the digital technologies have not only dissolved the power of print, but also revolutionized the ways that Literacy is recognized, and practiced. Besides, a shift from print text to screen has some obstacles and some opportunities for teaching and learning. These changes need better levels and forms of strategic knowledge that enable students to navigate successfully through the lots of information available in the Internet. In fact, there are still a lot of similarities between the digital and print texts in terms of reading comprehension, the content, vocabulary and structure. However, students need similar skills and strategies while reading either digital or print texts.

Some researchers stated that students use more strategies when reading digital texts online than print ones as they have the opportunities to find definitions, pronunciations, and clarification of terms. In addition, Reinking (2011) stated that electronic texts combine visual and verbal messages in unique ways. Besides, electronic texts create true interaction between the reader and the text and give instant feedback.

Leu and Reinking (1996) suggest that strategic knowledge may be more important in electronic environments than print environments, because the



“electronic environment requires more decisions about which sources of information to explore in order to accomplish a learning goal” (p.56).

The tablet digital text use has some advantages. Firstly, most students who are digitally native do not need any prior training in using the tablets as they have experience using them. Thus, schools can start integrating tablets at any time. One of the researchers, Chiong (2011) stated that using tablets in the classroom does not need training students who have experienced these devices in their daily life situations. Even if the students face any problem, they work collaboratively to solve it. Secondly, the tablets applications are available and can be obtained easily for an affordable price. Also, teachers can easily find applications either free or provided by the text books publishers to meet the students’ needs and create magnetic environment which is conducive for learning. Thirdly, tablets are easy to have and use as they are portable, and they are inexpensive and portable. Fourthly, the tables can easily switched on and off; therefore, the instructional time is not lost waiting for a computer to boot. Fifthly, the tablets support English as Second Language (ESL) students due to the availability of applications in most languages. Sixthly, tablets are very effective in catering to students who have diverse learning styles like visual learners and auditory learners (Couse & Chen, 2010).

The use of mobile devices, including the tablets, can grant an opportunity for students to achieve deeper understanding of complex text and function with dependence on specific tasks. The tablets can also support literacy skills like adjustment of font size, audio capabilities, note-taking, e-dictionaries, and video components (McClanahan, Williams, Kennedy & Tate, 2012).

Other researchers supported the effectiveness of tablet features in teaching and learning. For example, Zsofia et al (2015) indicated that lack of resources that

enable the reader to recognize and understand key terms and concepts hinder comprehension. The use of tablets and its applications can grant the opportunity to find out the meaning of key concepts and terms; this enhances background knowledge and expands the schema through which meaning is constructed. In addition, the applications of tablets increase the reader's interaction and enrich his schema by manipulating font size and style, highlighting passages, using synonyms and hearing the writing via text-to-speech features.

Although many educators and researchers have supported smart technology implementation and integration in the classroom, there are still others who fear its consequent results as instructional tools. In addition, there are still some challenges that face the educational field in fully integrating tablets in the classroom. Since tablet integration is still a new phenomenon in school, and students and teachers are still viewing tablets as a way to engage students in learning rather than instructional tools (Benton, 2012).

Students may accidentally engage in functions that are not intended. For example, touch screens are very sensitive, and they may close the program or open up another application. In addition, many technical problems may stem from charging the device and viruses may damage all the students' assignments (Benton, 2012). Furthermore, the excessive use of tablets may hinder students' daily life of exploring and manipulating objects. It also decreases the physical social integration between the students and the social community. Furthermore, these devices may cause behavioral troubles among students due to the misuse of these devices (Barron et al., 2011).

Another serious issue is that the excessive use of tablets may impact the students' health badly as it may cause some diseases like cancer, heart disease, high



blood pressure and damage to hearing if they use them more than 3 hours a day (Getz, 2012).

Additionally, some teachers are still hesitant to change their practices, since they are not acquainted with the tablets. Some teachers are not technology literate and they need to learn how to use the applications before implementing them. This takes time and efforts from teachers whose technological knowledge needs improving. In addition, some teachers are not skillful in teaching with smart technology and they need intensive training to use the smart technology in instruction, planning and assessment. Moreover, some teachers are not familiar with the emailing systems and receiving students' work, homework and following up the students' work online (Barron et al., 2011; Benton, 2012).

Thus, teachers will resist smart technology integration as it demands changing their pedagogical and instructional practices. This will increase their anxiety and may have a negative impact on their self-efficacy. Franklin (2007) found that teachers view technology integration in the classroom as too difficult due to shortage of time needed for planning, having too much curriculum to cover and too many high stakes tests to worry about. Some teachers also believe the process is very challenging due to the dramatic changes in smart technology and ongoing need for continuous training.

Regarding teachers' perspectives towards tablet integration, some researchers like Benton (2012) conducted a qualitative study to examine the teacher's experience while using the tablets as an instructional tool across the curriculum in different subjects. Benton (2012) reached the following results. Firstly, teachers received inadequate and limited training to implement the tablets. Secondly, teachers did not change their pedagogical behaviors and they continued using their old methods of

instruction. Thirdly, teachers viewed tablets as a way of engaging students in their learning rather than the instructional tool.

Cristin (2012) confirmed the findings of Benton (2012) regarding the need for the professional and technical training of the teachers for tablet implementation. He also stated that teachers are still using tablets as reward and encouragement, rather than for educational and instructional purposes. Teachers are recommended to prepare themselves for effective pedagogical and instructional uses in classroom. Teachers are encouraged to select the most appropriate applications to be utilized in their language arts instruction.

Another research study conducted by Puerling (2012) confirmed the results of the previous studies that emphasized the importance of pedagogical, instructional and technical training to understand how to use and implement tablets in instruction, planning and assessment to meet the needs of today's learners. Moreover, there is scarcity of research on using the iPad tablets in EFL instruction due to the newness of these tablets that had been introduced after 2010.

There has a third position that stands between the researchers who are for or against tablet integration. This third position calls for patience and grants time and opportunities for the research and practices to demonstrate the effectiveness of tablets in the classroom. For instance, Pollitt (2013) called for investigating the effectiveness of ipads and their role in the classroom before investing billions of dollars in a technology which has not fully researched no matter how exciting it is. In addition, Falloon (2013) confirmed that the research on the impact of the iPad and its Apps as effective educational tools is still in its infancy due to the lack of research that guides the practices. The researcher's position is based upon the fact that the tablets are new in the field of education.

## 2.9 Technology and Motivation

Motivation plays a critical role in language learning as emphasized by Dörnyei (2005) who stated that motivation is “sustained process of mastering an L2” (p.616).

The term ‘motivation’ is used by language teachers to describe successful or unsuccessful learners. In fact, the process of mastering a second language is hard, long and tiring. Thus, students are in need of some types of motivation that charge their enthusiasm, commitment and persistence (Dörnyei, 2010).

One study related to motivation was conducted by Kirk (2011), giving ratings from a teacher of L2 learners. She stated that the motivation for the students who preferred learning by the digital devices was remarkable, and the findings of this study showed that students who learned through the tool of the tablets had more confidence and eagerness to learn.

Similarly, Marmarelli and Ringle (2011) stated that modern technologies such as tablets can help in motivating the students to read fluently and have a positive impact on struggling readers. Besides, Webb (2012) stated that students using the tablets demonstrated high motivation and a demand for its use. He also emphasized that students using iPad had a 6% greater chance of passing the Reading Comprehension Tests.

Another study carried out by Henderson and Yeow (2012) indicated that the use of iPad fostered the opportunities of students’ collaboration and engagement and the development of 21st-century skills. Such opportunities will increase the self-efficacy and motivate students to read more. Besides, Larson (2010) found out that electronic texts can make the reading experience more individualized, interactive.

and engaging. In addition, Eagleton and Dobler (2007) added that digital texts are more advantageous than printed texts, as they enable students to physically interact with and manipulate texts and to transform texts to meet their needs and interests. Such interactivity features of tablets increase students' engagement and motivation as well.

Tablets can also increase the engagement of struggling readers and enhance their reading comprehension levels. Moreover, Henderson and Yeow (2012) stated that the use of iPad fostered the opportunities of students' collaboration and engagement and the development of 21<sup>st</sup> century skills.

A research study was conducted by Schweder and Wissick (2011) to study the effects of using mobile devices in the classroom. The findings of the study showed that the use of iPod Touch devices support enabled a teacher's differentiated instruction to meet the individualized needs of the students and increased students' motivation in learning.

In one qualitative study carried out by Cohen (2011) to explore the children's perception of the iPad and the applications, Cohen (2011) found that the iPad increased the children's motivation in the elementary classroom because of the touch screen capabilities and the easy accessibility of the apps. He mentioned that effective integration of tablets is required to ensure the successful results of the students.

Swanson (2012) emphasized that there are three steps in achieving reading fluency that are word recognition, practice, time, and motivation. The third step, motivation is the most important one to keep the struggling reader to continue improving his/her reading skills. Thus, the tablet, that is a motivational instruction tool can be used effectively to motivate the students to enhance their reading skills.

In fact, the technology may impact the students' motivation. Some researchers like Ciampa (2012) found out that the use of digital eBooks increased the students' reading motivation in general and struggling readers in particular. He added that student's interaction with the digital eBooks increased their interest and engagement in reading. While the results were the opposite for Grimshaw, Dungworth and McKnight (2007), who stated that motivation is not found with traditional texts compared to electronic texts. The explanation for this finding is that the digital text has some features "such as word pronunciation, narration, sound effects and animations, which support the text, all help to remove the effort from decoding individual words and allow the child to focus on meaning" (Grimshaw et al. 2007, p. 584).

So far, digital texts have more advanced features, such as text to speech and highlighting of words, showing synonyms and antonyms, grammar and spelling check, translate..etc.. These features as stated by Grimshaw et al (2007) increased the students' comprehension and their motivation to read. Despite their clarification of the support of these digital features, the findings of Grimshaw et al (2007) showed no major significant differences within reading achievements of students between traditional texts and electronic texts. In contrast to the previous study, the results of Ertem (2010) displayed a significant increase in reading comprehension when students engaged in digital texts that incorporated animations more than their engagement in the print texts. Additionally, Fox (2015) concluded through his review of some research studies that technology has had an overall positive effect on reading comprehension and motivation.

## 2.10 Reading Achievements, Strategies and Motivation

The relationship between reading achievements and reading motivation supporting is complicated. Some researchers like Gottfried (1990) argued that reading achievements directionally affects motivation more than motivation directionally affects achievements. Interestingly, Cabral-Márquez (2011) stated that students need the “skill” and the “will” to be successful readers. These two concepts are the result of cognition and motivation relevant to reading. This will be interpreted easily that there is a relationship between the achievements and motivation that are closely related to the skill and will of the reader. Teaching of reading strategies can only be effective if the reader is willing to open the book and engage the text (Guthrie & Coddington, 2009). Some researchers like Ciampa (2012) confirmed the positive relationship between the reading comprehension and intrinsic motivation for all readers in general and struggling readers in particular.

Reading motivation is very important for students to read and to understand what they are reading; what motivates students to read more, knows how to read that is relevant to the metacognitive reading strategies. A great deal of research studies showed positive correlations between the reading achievements, strategies and reading motivation.

One of these studies conducted by Meniado (2016) carried out a study to identify the metacognitive strategies used by the Saudi college students and to identify if there were relationships between the metacognitive reading strategies, motivation and achievements. The findings showed a positive correlation between reading strategies and reading motivation, but there was no correlation between reading motivation and reading comprehension.



In the Yemeni context A quantitative research study was conducted to explore the metacognitive reading strategies reported by EFL Undergraduate Students: Al-Sobhani (2013) used the same survey SORS used in the present study. The results showed that all three subscales of reading strategies fell in the category of high frequency of usage with means ranged between 3.53 and 3.94. Additionally, "Problem Solving Strategies" were used more than "Global Strategies" and "Support Strategies". No significant differences were found between male and female students. Moreover, the Yemeni students' global and problem solving reading strategies correlated positively with their reading achievement scores.

Another quantitative study in the Iranian context carried out by Jamshidi (2013) to explore the effectiveness of intermediate level EFL learners' awareness of reading comprehension strategies, and their motivation to read. He found out that the students' awareness of reading strategies correlated positively with their reading motivation and reading comprehension abilities.

In the Malaysian context, Ahmadi (2013) reached to similar findings that reading motivation had a positive impact on students' reading comprehension which, in its turn affected their reading achievements positively. Consistently, with Seymour and Walsh (2006), motivation is one of the key factors for EFL students that positively impact their reading comprehension abilities and their reading achievements.

In the Turkish context, Memiş and Bozkurt (2013) sampled grade five EFL students to investigate the relationships between reading comprehension and metacognitive reading comprehension strategies, internal-external motivation and reading level. The results of the study showed moderate and positive correlations between the reading strategies, reading motivation and reading levels.



In congruent with the findings of the previous study, Togia, Korobili and Malliari (2012) found out that motivation had positive significant correlation with both learning strategies and self-regulation. They added that Greek IT students, who were more motivated, were more cognitively engaged and achieved more in learning.

## 2.11 Chapter Summary

This chapter reviews the theories, models and research efforts that tackled the process of reading achievements, metacognitive strategies and motivation. The theoretical framework sections tackled the sociocultural theory, Models of Reading in L2, New Literacies, Transactional Theory, and Motivational theories that form an umbrella for the study. For example, the sociocultural theory emphasizes the social and cultural factors in the process of learning that becomes socially and culturally taking place within the concept of new literacies. The knowledge's construction started to depend more on social learning that results in the dramatic progress in the digital technology and means of communication (Leu et al., 2004).

"New literacy" considers literacy a social practice and crystalizes the concept of multiple literacies that vary according to time, place and the power of culture (Gee, 1991; Street, 1996). Moreover, the complexity of Literacy practices changed the way of comprehending and viewing the world (Coiro, 2003a). This theory helps deepen understanding of the digital literacy practices and shifting towards smart digital environment. In addition, the Transactional Theory gains its importance in this study as it is based upon the fact that meaning is constructed by the transactions between the reader and the digital or print texts (Rosenblatt, 1995).

The motivational theories are considered a genuine framework to this study since motivation is very essential in learning and mastering the second language so

as to promote learning, performance, enjoyment, and persistence. Though intrinsic motivation is more desirable as it results in better learning outcome, both intrinsic and extrinsic are critical for fostering reading either in digital or print texts; any reader is in need of motivation or what motivates a learner to read is knowing how to read (Dörnyei, 2005; Cooper & Kiger, 2006).

It is of great importance to discuss the Metacognition that is a deliberate, conscious, foresighted, and purposeful process that guides the reader and supports him to achieve an outcome to solve problems while reading (Flavell, 1976). The present study highlights all the three metacognitive strategies including Global Reading Strategies, Problem-Solving Strategies and Support Strategies. These strategies assist EFL learners to enhance reading comprehension and increase their reading comprehension scores (Mokhtari & Sheorey, 2001).

Other themes including research efforts have been reviewed in this chapter. One of these themes is that the use of tablets has some benefits in enhancing reading in EFL context. Many researchers found out that using technology has positive effects on enhancing the reading skills of the students due to its interactivity and accessibility to rich instructional resources (Larson, 2010; Thoermer & Williams, 2012; Bennett, 2011; Patronis, 2014; Ojalvo, 2010).

Another theme is that the findings of some research studies showed that the tablets increased the students' achievements in literacy skills in general and reading achievements in particular (Reichenberg, 2014; Thoermer & Williams, 2012; Puerling, 2012; Smaldino, Lowther, & Russell, 2012; Couse & Chen, 2010; Hansen & Borthwick, 2012; Bebell, Dorris, & Muir, 2012; Roblyer & Doering, 2013; Smaldino, Lowther, & Russell, 2012).

Regarding the effectiveness of tablets and smart technology, many researchers emphasized that tablets can enhance teaching and learning in the classroom and help create interesting learning environment that reinforce student centered approach (Zouves, 2012; Broden, 2013; Fagan, 2013; Bernier, 2013; Findell, 2013; Virginia Department of Education, 2012; Ekkers, 2014; Vu, 2013; Hu, 2011).

Considering the impact of smart technology on motivation, some studies have found out that smart technologies, such as tablets can help in motivating the students to read fluently and have a positive impact on struggling readers (Marmarelli & Ringle, 2011; Webb, 2012; Larson, 2010 ; Eagleton & Dobler , 2007; Henderson & Yeow, 2012; Schweder and Wissick, 2011; Ekkers, 2014; Cohen, 2011; Swanson, 2012)

The tablet digital texts use has some advantages such as easy use, affordable cost, portability, interactivity and wide acceptance. However, the excessive use of tablets decreases the physical social integration among students. The tablets may cause behavioral troubles and distraction among students due to the misuse of these devices and this impacts the classroom management negatively (Barron et al., 2011). Also, the excessive use of tablets may impact the students' health and wellbeing badly (Getz, 2012). Furthermore, despite the widespread use of digital texts, there are still some students preferring using special features accompanying print texts to those incorporated into digital texts, and they preferred print books (Woody et. al., 2010). Another important issue is that the tablets effectiveness has not been fully researched though they are very exciting to students, parents and schools (Falloon, 2013).

## **Chapter 3 : Methodology**

### **3.1 Introduction**

Methodology is the most important stage in the research because it dictates what is needed to answer the research questions. This chapter presents a full description of the quantitative method employed to carry out the present research study. It starts with the five research questions that the study intended to address followed by a description of the study background, context, and settings. Then, the materials used in carrying out this research study are described. Next, the research designs are revealed. Additionally, the population, participants, and sampling procedures are stated. Moreover, the three instruments (Reading Achievements Test, Survey of Reading Strategies, and Survey of Reading Motivation) are presented with their validity and reliability. After that, the data collection and analysis procedures to conduct the study are fully described. The ethical consideration is also addressed thoroughly. Finally, the chapter is concluded by a summary of materials and methods used to conduct the study.

### **3.2 Research Questions**

#### **Research Question 1**

What are the differences in the reading achievements between the seventh grade students using Print Texts and those using Tablet Digital Texts?

#### **Research Question 2**

What are the differences in the reading comprehension strategies between the seventh grade students using Print Texts and those using Tablet Digital Texts?

### **Research Question 3**

What are the differences in the reading motivation between the seventh grade students using Print Texts and those using Tablet Digital Texts?

### **Research Question 4**

What are the correlations between seventh grade students' Reading Achievements, Reading Strategies, and Reading Motivation when they read using Print Texts ?

### **Research Question 5**

What are the correlations between seventh grade students' Reading Achievements, Reading Strategies, and Reading Motivation when they read using Tablet Digital Texts ?

## **3.3 Background and Setting**

This study was carried out in two schools that are implementing American curriculum and using the Common Core State Standards (CCSS) for the English language. The Common Core State Standards were initiated in 2009 to outline what K-12 students should know in English Language at the end of each grade (Simpson, 2015). In 2014, forty-three US states adopted the CCSS in their education systems (Simpson, 2015). American curriculum schools worldwide are beginning to implement the CCSS as well, including the 30 American curriculum schools in Dubai and four schools in Ajman. CCSS includes a set of expectations of knowledge and skills that all students have to master in order to participate effectively in the global economy (Coiro & Kennedy, 2011).

In one of the schools, there are 880 students from kindergarten to grade twelve. This school uses tablet digital books in teaching and learning for all the

grades. This school has two grade seven classes; one for boys and one for girls. The second school has about 1200 students from kindergarten to grade nine. The second uses the same standards and the same texts but in print form. It has three grade seven classes; two for boys and one for girls.

Both schools are located in one of the emirates in the United Arab Emirates; about 80% of the students are from the UAE; 15% of students are Arab students and 5% are from the United States of America, Europe and Asia. The students' socioeconomic status ranges from middle to upper class. The English lessons are taught by qualified bilingual teachers who are competent and proficient at English and Information Technology skills. There is gender separation in both schools, girls are taught by female teachers and boys are taught by male teachers.

This study was conducted in four seventh-grade classrooms. The tablet digital texts group students are from one school, and the print texts group students are from another school in one of the emirates in the UAE. All classes in the study had similar demographic features as well as a similar time of school day. Furthermore, the two groups followed the same common core curriculum pacing guide. Therefore, the participants were exposed to the same path of reading instruction up to the same point in the academic year of 2015-2016.

Based on criteria of the Common European Framework of Reference for Languages (CEFR) descriptors, the majority of the students were considered to be independent users of English. Students' abilities in English ranged between B1 and B2—the majority of which are B1 students. The B1 English proficiency is described on the CEFR global scale as follows:

Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise



whilst traveling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans (Martyniuk, 2006, p. 6).

These language placements are derived from the reading scores of the students in Measures of Academic Progress (MAP) interim assessments from Northwest Evaluation Association in 2015, as well as the teachers' appraisals of student proficiency skills based on their performance in class activities and summative assessments. For the reading proficiency of the seventh grade students, it was found out that:

Students are able to understand factual texts on subjects related to their interests that consist mainly of high frequency every day or job-related language. They can recognize significant points in straightforward newspaper articles on familiar subjects and can understand the description of events feelings and wishes (Martyniuk, 2006, p8).

### **3.4 Materials**

The seventh grade students studied a thematic unit that covered four main readings. The main theme of the big question of this unit is, "How does the natural world affect us?" This unit is about nature in which the students read literature and science texts about living things such as animals and plants. Additionally they read about hurricanes and their impact on people.

The students read four main readings in this thematic unit. The first reading selection is a novel "From Project Mulberry" by Linda Sue Park. The second reading is a science article entitled "Ecosystems: The Systems of Nature." This article tells



important facts about the world around us. The third reading is a short story and a poem entitled “Ali, Child of the Desert” by Jonathan London. The students read about the Kingdom of Morocco and how the people living in the desert are affected by the natural world. The fourth reading is informational text “Blowing UP A Storm” in which the students learn how hurricanes form and what happens when they reach land.

Each reading covers a framework for teaching academic content and language skills. The unit focuses on nature; it provides a balance of informational texts and classic and contemporary literature. It also includes practice activities including academic key vocabulary, reading strategies, reading comprehension, grammar and writing.

For teacher resources, there is a unit planner that outlines the unit at glance, showing all the skills, resources and assessment opportunities. Teaching the unit starts with setting the learning outcomes that are derived from the common core standards. The teacher introduces the theme “How does the natural world affect us?” This theme provides the starting point for building understanding of key concepts and academic vocabulary. The unit and its four related readings are introduced as follows:

The unit starts introducing the content in which the students are informed that this unit includes a novel excerpt, short story, a poem and articles that will help students understand our relationship to nature. Students will practice reading and compensation skills such as predicting, previewing and visualizing and they will also apply academic language strategies such as word analysis.

Teaching this thematic unit for the seventh grade students in both groups includes the following steps.

The first step introduces the big question that is “How does the natural world affect us? This big question comprises the main theme of the unit. Teachers ask students to consider different parts of the natural world, such as the air, water, living things that inhabit earth, including plant and animals, and ask question such as:

- What parts of our natural world are essential for our survival? Explain.
- What parts of our natural world are essential for our enjoyment? Explain.

The second step is visual literacy before students read the selections in this unit; teachers encourage them to preview visuals such as photos, illustrations, diagrams, circle graphs, and maps. Then, teachers introduce the new academic words and the students listen to these words, define them, and use them in sentences.

The third step is listening and speaking of the texts of the four readings followed by responses to literature and informational texts. There is a variety of exercises in the workbook including multiple choices and open ended questions.

The fourth step is reading comprehension in which the students recall, comprehend, analyze and connect by asking students to list experiences they have had with the natural world. Encourage them to think about the experience on their own. Then the students respond to the literature or informational texts. The students are trained to use reading strategies such as setting a purpose for reading, previewing the text, predicting what the text will be about, visualizing that help make pictures in your mind, identifying the main ideas, identifying the supportive details and decoding strategies.

The four readings were taught in 4 weeks; each one was given in one week and the fifth week was revision and the students presented their projects and assessment of the unit that included tests in the four language skills, vocabulary and grammar.

The resources used for seventh grade students using print texts to teach this unit included the students' book, workbook, Audio CD, Teacher's Edition.

The resources used for seventh grade students using Tablet digital texts to teach this unit included the student eText CD-Rom that includes the full student edition and selection and activities come alive with audio support for each reading. Teacher e Text CD-Rom includes the entire book with online access. Audio CD includes recording of all the readings, key words, literacy terms and critical oral reading fluency. In addition, there are apps including interactive flash cards for all the words and word check games.

### **3.5 Design**

Two designs were used in this study, a cross sectional survey design and a correlational design. The cross sectional survey design was used to describe the reading achievements of the tablet digital texts group and the print texts group. Then, the survey of reading strategies was intended to measure the seventh grade students' actual practices of reading strategies. Similarly, the survey of reading motivation was used to measure the reading motivation levels of the seventh grade students in English language reading lessons. Data was collected about the opinions and attitudes of the seventh grade students regarding the reading strategies and motivation.

The correlational design was also employed to predict if there are relationships between the three dependent variables; the reading achievements, reading strategies and reading motivation in the print texts group and the tablet digital group.

### 3.6 Population and Participants

The population included four schools in one emirate in the UAE according to a formal source from the Ministry of Education. These four schools are using American curriculum in teaching English language as well as other subjects. Each school has two classes for seventh grade; one for boys and one for girls except for one school that has two boys' classes. Each class has students ranging from 18 to 25 students. It is important to mention that only one school is using tablets in teaching while the other three schools are using print texts.

The participants of the study included 75 seventh-grade students in two schools in one of the emirates in the UAE (2015-2016). One school was using print texts. The participants in both schools were in grade seven. The tablet digital texts group ( $n=34$ ) comprised 2 classes; 1 boys' class ( $n=20$ ) and 1 girls' class ( $n=14$ ). The print texts group ( $n=41$ ) comprised 2 classes; 1 boys' class ( $n=23$ ) and 1 girls' class ( $n=18$ ).

### 3.7 Sampling

The study selected two schools as purposeful convenience sampling. The two schools were selected because they are the only available places for carrying out the study. In addition, the teachers and students were willing to participate in the study. Moreover, the participants shared similar demographic characteristics like age, gender, ethnicity, and socioeconomic background. In addition, the two groups used the same Common Core standards for teaching and learning English. They also used the same textbooks. Also, the school timing and numbers of English lessons were the same. It is interesting to mention that these two schools are following the same

teaching materials in English language and the same standards and scope and sequence, but the only difference is that one school started integrating the Tablet Digital Texts in instruction while the other is still using the print texts.

One of these two schools comprised the tablet digital group, the study sampled the whole seventh grade students (2 classes; 1 class for boys ( $n=20$ ) and 1 class for girls ( $n=14$ )). The other school comprised the print texts group, the study also sampled students (2 classes; 1 class for boys ( $n=23$ ) and 1 class for girls ( $n=18$ )). This school has two boys' classes ( $n=23$  each). However, one class for boys' class was selected randomly for participating in the study.

### **3.8 Research Instruments**

To answer the five research questions, the following three instruments were used in this study:

#### **3.8.1 Pearson Reading Achievement Test**

This test was used to measure the participants' reading achievements scores as pre-test and post-test, as shown in Appendix A. The test was given as an interactive application by the researcher for the participants of the tablet digital texts who had the tablets, while the other participants of the print texts group used the printed version. the reading achievement test is a curriculum-based assessment designed to assess students in the areas of reading in this context. Hyland (2003) indicates that achievements tests are "based on a clear indication of what has been taught, testing the genres that have been the focus of the course" (p. 214). This reading achievements test is intended to discern whether students acquired sufficient



knowledge of what they were taught in class. This test is specifically designed to address the reading skills and conventions presented in this textbook. Thus, this test demonstrated both context validity and content validity since it measures what it is intended to measure. Additionally, it is important to include the following criteria when constructing test specifications for achievements tests:

- The objective of a lesson, unit, or course being assessed.
- The relative importance (or weight) assigned to each objective.
- The tasks employed in classroom lessons during their timeframes.
- Practicality issues such as the timeframe of the test and turnaround time, as well as the extent to which the test structure lends itself to formative wash back (Brown , 2004, p. 48).

The principles mentioned above are clearly applied in the reading achievements test that is based upon the learning outcomes of the unit and it is appropriate to the content of the unit and the abilities of the students and their proficiency levels.

This achievements test includes having students complete brief, standardized tasks that are in line with Common Core State Standards. It also includes four reading comprehension passages followed by sixteen multiple-choice questions.

The test included two narrative reading passages and two functional ones followed by multiple questions. The researcher asked experts to review the test to ensure that the test was valid, one school principal who is a specialist in reading, stated that the test results were consistent with the results of MAP that is online standards test taken by the students, two curriculum coordinators confirmed that the test was trusted in its results. In addition, two heads of English Department in both schools emphasized that Pearson Test was a good indicator of the proficiency of the

student<sup>s</sup>. In addition, three English teachers in both schools stated that the Pearson Assessment measures the students' skills against Common Core State Standards adopted in the schools. Moreover, the researcher who is one member of the senior management team in the school and the head of the assessment and examinations committee in the school, compared scores of Pearson Reading Test with the reading scores of the seventh grade students in English language for the first term final exam and found out that 80 % of scores were consistent with the students' results in the reading. The test was also reviewed by two university professors who are specialists at EFL reading and two English supervisors who stated that it is a good assessment tool as shown in Appendix O.

Regarding the reliability of the Reading Achievements Test, the split-half reliability was calculated to assess the internal consistency of this Reading Achievements Test of the 75 participants in both groups by comparing the results of the odd numbers with the results from the even numbers. The Guttman split-half reliability coefficient was found .62.

The test measures the following items: chronological order, setting, drawing conclusion, theme, fable, inferences, main idea and supporting details, comparison and contrast, and comprehension, as well as the academic word levels in this grade. In addition, the test items covered all the items of Common Core State Standards for grade Seven.

The readability of the test passages was judged by a Flesch Kincaid readability formula for English, and the grade readability level was 5.5 for US school grade level system. This means that the score of grade readability level 5.5 is appropriate to the participants who are non-native speakers.



### 3.8.2 Survey of Reading Strategies (SORS)

This survey was developed by Mokhtari and Sheorey (2001). It has been intended to explore the participants' perceptions of the reading strategies they report while reading either the digital text or the print tone. It comprises two parts: the first part consists of general information; the second one includes 30 statements in which the respondents report the frequent uses of the three categories of reading strategies as shown in Appendixes B, P and Q.

The scale ranges from a high score of 5 (always) to a low score of 1 (Never). A response of two (occasionally), three (sometimes), or four (usually do this), indicate a response falling in between the lowest and highest response level as shown in Appendixes B.

The Survey of Reading Strategies tackles three subscales and categories of strategies. The first category is "Global Reading Strategies" (13 strategies) that deal with pre-reading activities such as having a purpose in mind before reading and thinking about what one already knows about the material before reading (Mokhtari and Sheorey, 2001). The second category is "Problem-Solving Strategies" (8 strategies), including functions and manners that readers use when they meet difficulties in comprehending textual information such as rereading and adapting one's reading rate to the difficulty level of the text (Mokhtari and Sheorey, 2001). The third category is "Support Strategies" (8 strategies), that include taking notes, reading aloud, underlining or mark-up information using references, paraphrasing, and going back and forth (Mokhtari and Sheorey, 2001).

This survey was given to all participants in the tablet digital texts group and at the same time it was given to all the participants in the print texts group in both schools during the activity period as shown in Appendixes B and C.

It is interesting to note that the researcher was granted the permission by the authors of SORS to use their survey on February 16<sup>th</sup> 2016, as shown Appendix G.

The Arabic version of Alsheikh (2002) was used but modified. Additionally, 30% of the Arabic version items were rewritten in a simple language that is appropriate to the students' Arabic Language proficiency level. Then, the Arabic version of the survey was validated by a jury of referees including four bilingual professors, three translators and two Arabic Language supervisors as shown in Appendix M. These experts also suggested modifying 10% of the items. The final Arabic version of the survey was prepared as shown in Appendix E.

For the validity of Survey of Reading Strategies SORS by Mokhtari and Sherory (2002). This survey was also used by other researchers whose studies demonstrated adequate validity and reliability like Alsheikh and Mokhtari (2011) implemented this instrument (Survey of Reading Strategies- SORS) with native and nonnative English speakers. They added that:

The instrument was field-tested extensively with diverse student populations including native and non-native speakers of English and was found to have well-established psychometric properties including validity and reliability data ( $\text{Alpha} = .93$ ) (Alsheikh & Mokhtari, 2011, pp. 152-153).

It was also implemented in other studies including a research study entitled "Study Investigation and Analysis of Online Reading Strategies by Angel Kymes (2007), Faculty of the Graduate College of Oklahoma State University. In this study that used SORS, reliability correlation coefficients in the three subscales ranged

between 0.93 and 0.99. In the study of Mokhtari and Reichard (2002), the instrument was a highly reliable tool (Alpha = .89 reliability).

CreSwell (2012) clarified that the stability and consistency of scores from meaSuring variables stand at the degree of the reliability of participants' responses to judge their anSwers' consistency. To ensure the reliability of the results of SORS inStrument, Cronbach's Alpha coefficient should be between 0 to 1 and 0 to -1.

Regarding the reliability of Survey of Reading Strategies SORS used in the present study, Cronbach's Alpha coefficient was measured and the results were presented in Table 1.

Table 1: Reliability Coefficients for Survey of Reading Strategies (N=75)

Variable	Cronbach's Alpha	Items No.
Global Reading Strategies	0.80	13
Problem Solving Strategies	0.77	8
Support Strategies	0.80	9
Overall	0.90	30

As shown in Table 1, the instrument was reliable and the overall Alpha coefficients of the main scale of the SORS of the 75 participants was reported .90 which is very close to what found by Mokhtari and Reichard (2002). the instrument was a highly reliable tool (Alpha =.89). In addition, the three subscales were also reliable and their reliability coefficients were ranging between .77 and .80.

### 3.8.3 Survey of Reading Motivation

This survey is a student rated assessment of the extent to which each student is motivated to read. It was developed by the researcher after reviewing research studies like Wigfield and Guthrie (1997) to assess different aspects of student's reading motivation. It consists of 5 constructs of reading motivation including 22 items (See Appendix D).

A five point Likert scale used ranges from a score of 5 to a score 1 that refers to motivation levels associated with learning how to read in English. Each of the 22 statements is followed by five numbers (1, 2, 3, 4, and 5). Each number means the following: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly Agree (5).

The survey consisted of five subscales including Reading Efficacy Values (4 items), Attainment Values (7 items), Intrinsic Values (4 items), "Extrinsic Values" (5 items), and Engagement values (2 items) (See Appendix R).

The readability of the survey was judged by a Flesch Kincaid readability formula for English, and the readability grade level was 5 for US school grade level system. This means that the score of readability level 5 is appropriate to the participants who are non-native speaker. The survey is fairly easy to prevent any language barriers beside the Arabic version provided to ensure that students understand each item in the survey.

After preparing the survey of reading motivation, it was modified and validated by a jury of experts in the field of education, language, psychology and research. The experts provided the researchers with comments and suggestions like deleting 5 repeated items, adding some items and rearranging 4 items as shown in

Appendix L. The researcher also asked some students in the pilot sample to read the Survey of Reading Motivation to ensure that they fully understood all the items. Most of their suggestions were taken into considerations to prepare the final version of the survey. Additionally, most of suggestions of the experts and students were taken into considerations to prepare the final version of the survey.

After validating the English version of the survey of motivation, it was translated into Arabic by the researcher who worked as a senior translator and interpreter for three years. The Arabic version of the survey was modified and validated by a jury of referees including four bilingual professors, three translators and two Arabic Language supervisors. Those experts provided good comments and suggestions that were taken seriously to prepare the last version of the survey as shown in Appendix N.

To ensure the reliability of the results of the Survey of Reading Motivation used in the present study, Cronbach's Alpha coefficient was measured and the results are presented in Table 2.

Table 2: Reliability Coefficients for Survey of Reading Motivation (N=75)

Variable	Cronbach's Alpha	Items No.
1. Reading Efficacy Values (RE)	0.81	4
2. Attainment Values (AV)	0.84	7
3. Intrinsic Values (IV)	0.61	4
4. Extrinsic Values (EV)	0.76	5
5. Engagement Values (ENV)	0.69	2
Overall	0.92	22

As illustrated in Table 2, the Alpha coefficient of the 75 participants of the whole 22 items was observed (.92) and the scores of the five subscales were found

reliable as their mean scores ranged between 0 and 1 (.61 and .84). In fact, this instrument was reliable and its internal consistency could be trusted.

### **3.9 Pilot Study**

Twenty participants were randomly selected as a pilot sample to respond to the Survey of Reading Strategies (SORS) (Mokhatri & Sherory, 2002). The recruited participants were given two versions of the survey in Arabic and the original survey in English. Since the English version of (SORS) was permitted by the authors on the condition of using it without change, the feedback of the participants helped me to rewrite three items to improve the Arabic translation to be more understandable by participants. The results of the data collected were found reliable in the Alpha coefficient of overall SORS (Alpha = .89).

Similarly, the same procedure was used for the Survey of Reading Motivation. The same participants were selected as a pilot sample. Then, the feedback from the participants was used to revise the questionnaire to ensure that all items were clear and eliciting useful answers before it would be administered again to a larger group of participants in the main research study. Five items of the survey of reading motivation were rewritten in a simpler way. Additionally, the reliability of the pilot sample was found .91 for the survey of reading motivation.

### **3.10 Data Collection Procedures**

The three instruments had been prepared, validated, and approved by the advisor and the jury of experts and became ready for implementation. Once a formal approval was obtained from the Ministry of Education in the UAE to carry out the

study on February 15<sup>th</sup> 2016 as shown in Appendix F, four seventh grade classes within each of these schools were selected to participate in the study. The tablets and the print texts have already been prepared for implementing the study.

Schools sent permission forms home on February 15<sup>th</sup> 2016 with all students in these classes to approve and allow their participation in the experiment in the same day as shown in Appendixes H- I.

The consent form that was sent to parents informed them about the aim of the research and some details that the students will study one unit and they will be targeted to respond to Pretest and Posttest to measure the reading achievements, a survey to measure reading strategies and a survey to measure reading motivation. The letter included that participating in this survey is voluntarily and the data will be confidential and anonymous and used only for the research purposes. Then, a meeting was held with participating teachers to train for the experiment. The researcher asked their permission to participate and informed them that their participation is voluntary and they have the right to withdraw at any time. They showed enthusiasm and support. There was training conducted by the researcher, including instructions for administering the pretest and posttest.

The procedures of carrying out the research study were done as follows. First, the pre-test was given to the students on February 16<sup>th</sup> 2016 as shown in Appendix A. A digital copy of the pre-test was given to the tablet digital texts group and a print copy of the test was given to the print texts group. Second, the teacher started teaching the unit from February 17<sup>th</sup> until March 22<sup>nd</sup>, 2016. The tablet digital texts continued for five weeks. The unit and materials used in the unit were described in details previously in section 3.4 in this chapter. Third, the participants were given the same test as post-test on March 23<sup>rd</sup> 2016. A digital copy of the post-test was given



to the tablet digital texts group and a print copy of the test was given to the print texts group. Fourth, the Survey of Reading Strategies SORS was given to the print texts group and tablet digital texts group on March 24<sup>th</sup> 2016 (See Appendix B and C). The survey took about 20 minutes to complete. The survey was given to the seventh grade students in English and Arabic. The seventh grade students had the choice to respond in either Arabic or English to ensure full understanding of the items. In addition, the researcher and teachers supervised the whole process and answered any question from students. Fifth, the Survey of Reading Motivation was given to the print texts group and tablet digital texts group on March 24<sup>th</sup> 2016 (See Appendix D and E). The survey took about 20 minutes to complete. The survey was given to the seventh grade students in English and Arabic and the students had the choice to respond in either Arabic or English to ensure full understanding of the items.

### **3.11 Data Analysis**

After collecting the data from the three instruments formerly presented and the data was checked to ensure that there were no obvious errors, inconsistency, or double coding. Then, the minimum and maximum values, the numbers and the missing data and outliers for each variable were checked (Creswell, 2012). Next, the data was coded in a code book and each variable was given a number. After that, the data was entered to IBM SPSS Statistics 23 for analysis.

In fact, data analysis is one of the most significant elements in the quantitative method; therefore the researcher reviewed the previous studies that used similar instruments and consulted an expert in the field of the statistics to select the most appropriate analysis statistics to analyze the data.

The main assumptions were tested in this study to ensure that the results are accurate and interpreted properly. The researcher explained to the participants to work independently and did not impact the behavior of each either in the surveys. The tests were also conducted in an environment of integrity to prevent any cheating or support (Creswell, 2012).

The first, second and third research questions were analyzed by calculating descriptive statistics of mean scores and standard deviations for the three dependent variables; the reading achievements, reading strategies and reading motivation.

In describing and comparing the reading strategy use, three levels of language learning usages were initiated by Oxford and Burry-Stock (1995) and used by Mokhtari and Sheorey (2001) who considered 2.4 or lower (low), 2.5–3.4 (medium or moderate, and 3.5 or higher (high). These levels provided benchmark for exploring the frequent use of the reading strategies in each group and comparing the strategy in each group (Mokhtari & Sheorey, 2001). These levels were also used to compare the scores obtained from the Survey of Reading Motivation.

For the data analysis of the results of the fourth and fifth research questions, Pearson product-moment correlation coefficient was computed to assess the relationship between grade seven students' reading achievements, reading strategies, and reading motivation when they read using print texts and tablet digital texts.

### **3.12 Ethical Consideration**

The data was used only for the research purposes and has been kept secretly. The collected data in this study would not be revealed to anybody that might cause any physical, social or psychological harm to the participants.

The schools names, the participants' names, nationalities, ethnicity, religions and backgrounds would not be revealed to the public, so as to prevent any threat that may cause any harm. To ensure the confidentiality and privacy of the data collected, anonymity was adopted in this research study. Additionally, the participating students were given numbers to prevent any personal, social or academic threat that might because any harms them. Moreover, all participants were clearly informed that they were granted the right to withdraw and not to complete the participation in the study if they like at any time since their participation is not mandatory but voluntarily and willingly.

The following procedures were followed by researcher to ensure the ethical side of the research. For example, a letter from the United Arab Emirates University was sent to the Educational Zone to obtain permission to carry out the study. Then, the Educational Zone responded positively and sent formal permission to the schools and to the researcher for starting the study in February and March 2015 as shown in Appendix F.

The researcher held a meeting with the school principals and teachers who participated and sought their support and agreement to participate; the teachers and their principals were very positive and showed enthusiasm to participate. The researcher explained the aim of the research and some details about the materials and the instruments used in the study. The researcher also informed that participating is voluntarily and the data will be confidential and anonymous and used only for the research purposes. Additionally, the researcher had a meeting with the students informing them about the aim of the research and some details about the materials and the instruments used in the study. The researcher explained to the students that they have the right to withdraw from the study and their names would be anonymous

and they need to be honest. After that, a letter of parental consent was sent to all participants' parents to explain the aim and procedures of the research and to ask their written approval to allow their children to participate in the research as shown in Appendixes H to K.

The study was expected not to cause any psychological, physical or academic harm or damage and the students may get some benefits in participating with reading assessment and increases their awareness of the reading strategies and motivation.

The study proposal was reviewed and approved by Social Sciences Research Ethics Committee (REC) at the United Arab Emirates University. The decision is favourable since it has no major ethical concerns. Therefore, the proposal is approved for the duration of the research study as shown in Appendix S.

### **3.13 Conclusion**

This chapter sets the methodology and the materials used to carry out the present research study. It started with stating that the purpose of the study to explore whether the purposeful use of the tablet digital texts versus the print texts may impact the seventh grade students' reading achievements, reading comprehension strategies and motivation.

This chapter also presented the five research questions that were addressed to achieve the purpose of the research. In addition, it explained the context where the study took place. It included the setting of the study as it was conducted in two private schools in one emirate in the United Arab Emirates in 2015-2016. Detailed information was provided about the materials used to teach and test the thematic unit including standards, strategies, and resources. Additionally, this chapter described the population and demographic description of the participants and their language

proficiency levels. Additionally, purposeful convenience sampling procedures were explained.

This research study used cross sectional survey designs and correlational designs to guide the research. Moreover, it included detailed information about the three instruments: Pearson Reading Achievements Test, Survey of Reading Strategies and Survey of Reading Motivation were used in this study to collect data to answer the research questions. In addition, the procedures were stated to ensure that all the instruments were valid and reliable for providing trusted results. Moreover, the types of statistics including descriptive statistics of mean scores and standard deviation, Cronbach's Alpha coefficient, and Pearson product-moment correlation coefficient, were conducted to analyze the data. Finally, ethical and legal issues had been tackled in detail to prevent any privacy invasion and any type of harm to participants.

After providing a full description of the methodology implemented in the study in this chapter, the next chapter would display the results and findings of the study.

## Chapter 4: Results

### 4.1 Introduction

The purpose of this research study was to explore the impact of Tablets Digital Texts versus Print Texts on the seventh grade students' reading achievements, reading strategies and reading motivation. It also aimed at identifying the reading achievements, reading strategies and reading motivation levels of the seventh grade students while reading both print texts and tablet digital texts.

This chapter presents the results of each of the five research questions. The data were collected from 75 seventh grade students: 41 students comprised the print texts group and 34 students comprised the tablet digital texts group.

The data were collected using three instruments: Pearson Reading Achievement Test to measure and compare the reading achievements in both groups, Survey of Reading Strategies (SORS) to identify and compare the reading strategies in both groups, and Survey of Reading Motivation to compare the motivation levels in both groups. Then, the data collected by the three instruments were used to explore the correlations between the three dependent variables: Reading Achievements, Reading Strategies, and Reading Motivation within each group and between the two groups.

The study used different statistical analyses to find out the results for each of the research questions. A descriptive statistical analysis (means and standard deviations) was used to compare the means of the reading achievements, reading strategies and reading motivation between the two groups. Additionally, a Pearson product-moment correlation coefficient was used to measure the relationships

between the three dependent variables: the reading achievements, reading strategies and reading motivation in both tablet digital texts group and print texts group.

4.2 Results of Research Question One

The first research question aimed to explore the differences in the reading achievements between the seventh grade students using print texts and those using tablet digital texts.

Table 3: Reading Achievements of Print Texts Group & Tablet Digital Texts Group

Variables	Print Texts Group (n=41)		Tablet Digital Texts Group (n=34)	
	Mean	SD	Mean	SD
Pretest	20.98	4.88	21.06	4.68
Posttest	22.73	4.60	25.71	3.08

As shown in Table 3 the Pretest mean scores of the seventh graders using print texts (M=20.98, SD= 4.88) and those using tablet digital texts (M=21.06, SD=4.68) are nearly the same. While the results show that the seventh grade students using tablet digital texts (M =25.71, SD = 3.08) scored higher than their counterparts using print texts (M=22.73, SD = 4.60) in the Posttest mean scores.

4.3 Results of Research Question Two

The second research questions aimed at examining the reading strategies used by seventh grade students when reading print texts and tablet digital texts.

Means and standard deviations were calculated for the three subcategories: “Global Reading Strategies”, “Problem Solving Strategies”, and “Support Strategies” of the two groups. Tables 4, 5 and 6 show the means, standard deviations and degree



of each group starting with “Global Strategies”, “Problem Solving Strategies” and “Support Strategies” respectively.

In describing and comparing the reading strategy use, three levels of language learning usages as a benchmark of analysis were initiated by Oxford and Burry-Stock (1995). They considered 2.4 or lower (low), 2.5 – 3.4 (Medium or moderate), and 3.5 or higher (high). These three levels were used by Sheorey and Mokhtari (2001) and Mokhtari and Alsheikh (2011) to identify the levels of language learning usages in different contexts similar to the present study’s context.

Table 4: Descriptive Statistics of Global Strategies in the two Groups

Global Strategies	Print Texts Group			Digital Texts Group		
	Mean	SD	Degree*	Mean	SD	Degree*
1. I have a purpose in mind when I read.	3.56	1.38	High	4.18	.83	High
2. I think about what I know to help me understand what I read.	4.02	1.04	High	4.29	.72	High
3. I preview the text to see what it’s about before reading it.	3.39	1.18	Moderate	4.00	.95	High
4. I think about whether the content of the text fits my reading purpose.	3.24	1.20	Moderate	4.21	.73	High
5. I skim the text first by nothing characteristics like length.	3.22	1.42	Moderate	4.00	1.02	High
6. I decide what to read closely and what to ignore.	3.12	1.42	Moderate	3.68	1.15	High
7. I use tables, figures, and pictures in the text to increase understanding.	3.22	1.31	Moderate	4.06	1.10	High

8. I use context clues to help me better understand what I'm reading.	3.66	1.28	High	4.29	.91	High
9. I use typographical aids like boldface and italics to identify key information	3.46	1.45	Moderate	3.82	1.03	High
10. I critically analyze and evaluate the information in the text.	3.41	1.32	Moderate	4.32	.84	High
11. I check my understanding when I come across conflicting information.	4.12	1.19	High	4.24	.92	High
12. I try to guess what the material is about when I read.	3.85	1.04	High	4.26	.93	High
13. I check to see if my guesses about the text are right or wrong.	4.00	.89	High	4.12	1.04	High
Overall	3.76	.78	High	4.19	.52	High

\*High level (3.5- 5), Moderate (2.5-3.4), Low (1-2.4)

For the print texts group, Table 4 shows that 6 "Global Strategies" were reported as high frequently used strategies ranging between 3.56 and 4.12, and 7 strategies were reported as moderate frequently used strategies ranging between 3.12 and 3.46. The means of the 13 strategies ranged between 3.12 and 4.12.

The three highest frequently used "Global Strategies" were *"I check my understanding when I come across conflicting information."* with a mean of 4.12; *"I think about what I know to help me understand what I read."* with a mean of 4.02, and *"I check to see if my guesses about the text are right or wrong."* with a mean of 4.00.

The three least frequently used “Global Strategies” in the print texts group were “*I decide what to read closely and what to ignore.*” with a mean of 3.12, “*I use tables, figures, and pictures in the text to increase my understanding.*” with a mean of 3.22, and “*I skim the text first by noting characteristics like length and organization*” with a mean of 3.22.

In regard to the tablet digital texts group, Table 4 shows that all “Global Strategies” were reported as high frequently used strategies. The means of the 13 strategies ranged between 3.68 and 4.32. Additionally, the means of 11 “Global Strategies” were 4.00 or above and only 2 strategies were below 4.00, but these two strategies still fell in the category of high frequently usage.

The three highest frequently used “Global Strategies” were “*I critically analyze and evaluate the information presented in the text.*” with a mean of 4.32; “*I think about what I know to help me understand what I read.*” with a mean of 4.29, and “*I use context clues to help me better understand what I’m reading*” with a mean of 4.29. The two least frequently used “Global Strategies” in the tablet digital texts group were “*I decide what to read closely and what to ignore.*” with a mean of 3.68, and “*I use typographical aids like boldface and italics to identify key information.*” with a mean of 3.82.

To sum up, the means in all “Global Strategies” were observed higher in the tablet digital texts group than the print texts group. Additionally, the most and least frequently used strategies were different in both groups.

The results of “Problem Solving Strategies” in the print texts group and the tablet digital texts group are presented in Table 5.

Table 5: Descriptive Statistics of Problem Solving Strategies in the two Groups

Problem Solving strategies	Print Texts Group			Digital Texts Group		
	Mean	SD	Degree*	Mean	SD	Degree*
14 I read slowly but carefully to be sure I understand what I am reading.	3.51	1.40	High	4.24	.82	High
15 I try to get back on track when I lose concentration.	3.85	1.30	High	4.24	.96	High
16 I adjust my reading speed according to what I'm reading.	4.05	1.26	High	3.97	.97	High
17 When the text becomes difficult, I pay closer attention to what I'm reading.	3.88	1.33	High	4.35	.92	High
18 I stop from time to time and think about what I'm reading.	3.27	1.34	Moderate	3.82	.80	High
19 I try to picture or visualize information to help me remember what I read.	3.76	1.32	High	4.21	.85	High
20 When the text becomes difficult, I re-read to increase understanding.	4.15	.96	High	4.41	.70	High
21 I try to guess the meaning of unknown words or phrases	3.63	1.32	High	4.29	.72	High
Overall	3.76	.78	High	4.19	.52	High

\*High (3.5- 5), Moderate (2.5-3.4), Low (1- 2.4)

Regarding the print texts group, Table 5 shows that 7 "Problem Solving strategies" were reported as high frequently used strategies (Mean = 3.51- Mean = 4.15) and only 1 strategy was reported as moderate frequently used with a mean of 3.27. The means of the 8 strategies ranged between 3.27 and 4.15.

The two highest frequently used “Problem Solving Strategies” whose mean scores above 4.00 were “*When the text becomes difficult, I re-read to increase my understanding.*” with a mean of 4.15, and “*I adjust my reading speed according to what I’m reading.*” with a mean of 4.05. The least frequently used “Problem Solving Strategies” and the only moderate one was “*I stop from time to time and think about what I’m reading.*” with a mean of 3.27.

For the tablet digital texts group, Table 5 shows that all 8 “Problem Solving Strategies” were reported as high frequently used strategies. The means of the 8 strategies ranged between 3.82 and 4.41. Additionally, 6 “Problem Solving Strategies” were reported above 4.00 and only 2 strategies were below 4.00, but still fell in the category of high frequent usage.

The three highest frequently used “Problem Solving Strategies” in the tablet digital texts group were “*When the text becomes difficult, I re-read to increase my understanding*” with a mean of 4.41; “*When the text becomes difficult, I pay closer attention to what I’m reading.*” with a mean of 4.35, and “*I try to guess the meaning of unknown words or phrases.*” with a mean of 4.29.

The two least frequently used “Problem Solving Strategies” were “*I stop from time to time and think about what I’m reading.*” with a mean of 3.82, and “*I adjust my reading speed according to what I’m reading.*” with a mean of 3.97.

All “Problem Solving Strategies” in the tablet digital texts group were reported higher than the print texts group except for 1 strategy “*I adjust my reading speed according to what I’m reading.*” which was higher in the print texts group.

The scores of “Support Strategies” in the two groups are displayed in the following section.

Table 6: DeScriptive Statistics of Support Strategies in the two Groups

Support Strategies	Print Texts Group			Digital Texts Group		
	Mean	SD	Degree*	Mean	SD	Degree*
22 I take notes while reading to help me understand what I read.	3.41	1.28	Moderate	3.74	1.14	High
23 When the text becomes difficult, I read aloud to help me understand what I read	3.49	1.36	Moderate	4.15	.93	High
24 I summarize what I read to reflect on important information.	3.37	1.28	Moderate	4.03	1.00	High
25 I discuss what I read with others to check my understanding.	3.34	1.37	Moderate	3.74	1.24	High
26 I underline or circle information in the text to help me remember it.	3.98	1.29	High	4.03	1.09	High
27 I use reference materials such as dictionaries to help me understand what I read.	3.34	1.22	Moderate	4.00	1.13	High
28 I paraphrase (restate ideas in my own words) to better understand what I read.	3.46	1.43	Moderate	4.15	1.20	High
29 I go back and forth in the text to find relationships among the ideas in it.	3.56	1.23	High	4.06	.89	High
30 I ask myself questions I like to have answered in the text.	3.54	1.36	High	4.21	1.12	High
Overall	3.49	.72	Moderate	4.01	.73	High

\*High (3.5- 5), Moderate (2.5-3.4), Low (1- 2.4)

For the print texts group, 3 "Support Strategies" were reported as high frequently used strategies (Mean = 3.54- Mean = 3.98) and 6 strategies were reported

as moderate frequently used ones (Mean = 3.34- Mean = 3.49). The means of the 9 strategies ranged between (3.34 to 3.98) which showed that all means of all the 9 "Support Strategies" were below 4.00.

The highest frequently used strategies in the subscale of "Support Strategies" were observed as follows: *"I underline or circle information in the text to help me remember it."* with a mean of 3.98; *"I go back and forth in the text to find relationships among the ideas in it."* with a mean 3.56, and *"I ask myself questions I like to have answered in the text."* with a mean 3.54. The three least frequently used "Support Strategies" were *"I use reference materials such as dictionaries to help me understand what I read."* with a score mean of 3.34; *"I discuss what I read with others to check my understanding."* with a mean of 3.34 and *"I summarize what I read to reflect on important information"* with a mean of 3.37.

For the tablet digital texts group, as shown in Table 6, all the 9 "Support Strategies" were reported as high frequently used strategies. The means of the 9 strategies ranged between 3.74 and 4.21. Additionally, 7 "Support Strategies" were above 4.00 and only 2 strategies were below 4.00, but they still fell in the category of high frequent usage.

The three highest frequently used "Support Strategies" were *"I ask myself questions I like to have answered in the text."* with a mean of 4.21; *"When the text becomes difficult, I read aloud to help me understand what I read."* with a mean of 4.15, and *"I paraphrase (restate ideas in my own words) to better understand what I read."* with a mean of 4.15. The two least frequently used "Support Strategies" were *"I take notes while reading to help me understand what I read."* and *"I discuss what I read with others to check my understanding."* with the same mean of 3.74 for both strategies.



Similarly, the “Support Strategies” in the tablet digital texts group were reported higher than the print texts group in the means of all strategies.

Table 7: Descriptive Statistics of the Subscales of Reading Strategies (Two Groups)

Strategies	Print Texts Group			Digital Texts Group		
	Mean	SD	Degree*	Mean	SD	Degree*
Global Strategies	3.56	.61	High	4.11	.50	High
Problem Solving Strategies	3.76	.78	High	4.19	.52	High
Support Strategies	3.49	.72	Moderate	4.01	.73	High
Overall	3.60	.56	High	4.10	.51	High

\*High (3.5- 5), Moderate (2.5-3.4), Low (1- 2.4)

Table 7 illustrates that all types of reading strategies are frequently used in both groups. The overall mean reported for all the 30 strategies for the tablet digital texts group is 4.10 and 3.60 for the print texts group. In the print texts group, the highest mean reported was for the “Problem Solving Strategies” (M = 3.76) followed by “Global Strategies” (M = 3.56), and the least mean was observed in the use of “Support Strategies” (M = 3.49). In the tablet digital texts group, the highest mean was reported for the “Problem Solving Strategies” (M = 4.19), followed by “Global Strategies” (M = 4.11), and the least mean was observed in the use of “Support Strategies” (M = 4.01).

4.4 Results of Research Question Three

The results of the third research question aimed to explore the difference in the reading motivation levels between the seventh grade students using print texts and those using tablet digital texts. It addressed the five subscales of reading

motivation; Reading Efficacy Values (RE), Attainment Values (AV), Intrinsic Values (IV), "Extrinsic Values" (EV) and Engagement Values (ENV).

Table 8: Descriptive Statistics of Reading Motivation (Two Groups)

Variables	Print Texts Group (n=41)			Tablet Digital Texts Group (n=34)		
	Mean	SD	*Degree	Mean	SD	*Degree
Reading Efficacy	3.58	.81	High	4.17	.61	High
Attainment Values	3.57	.79	High	4.15	.64	High
Intrinsic Values	3.66	.69	High	4.07	.77	High
Extrinsic Values	3.76	.80	High	4.21	.78	High
Engagement Values	3.29	1.15	Moderate	4.06	.88	High
Overall	3.57	.69	High	4.13	.56	High

\*High (3.5- 5), Moderate (2.5-3.4), Low (1- 2.4)

As shown in Table (8) the following results were observed:

- (a) The seventh grade students in the tablet digital texts group (M = 4.17, SD = .61) scored higher than their counterparts in the print texts group (M = 3.58, SD = .81) in the reading the reading efficacy values.
- (b) The seventh grade students in the tablet digital texts group (M = 4.15, SD = .64) scored higher than their counterparts in the print texts group (M = 3.57, SD = .79) in the attainment values.
- (c) The seventh grade students in the tablet digital texts group (M = 4.07, SD = .77) scored higher than their counterparts in the print texts group (M = 3.66, SD = .69) in the intrinsic values.
- (d) The seventh grade students in the tablet digital texts group (M = 4.21, SD = .78) scored higher than their counterparts in the print texts group (M = 3.76, SD = .80) in the extrinsic values.

(e) The seventh grade students in the tablet digital texts group ( $M = 4.06$ ,  $SD = .88$ ) scored higher than their counterparts in the print texts group ( $M = 3.29$ ,  $SD = 1.15$ ) in the engagement values.

(f) The seventh grade students in the tablet digital texts group ( $M = 4.13$ ,  $SD = .56$ ) scored higher than their counterparts in the print texts group ( $M = 3.57$ ,  $SD = .69$ )

Overall, the seventh grade students in the tablet digital texts group scored higher than their counterparts in the print texts group in the five subscales of the reading motivation. It is also observed that all the means of the five motivation subscales in both groups fell in the high level (Mean = 3.5 or above) except for the Engagement Values in the print texts group that was moderate (Mean = 2.5 - 3.4).

#### **4.5 Results of Research Questions Four and Five**

The fourth and fifth research questions aimed at exploring the correlations between seventh grade students' reading achievements, reading strategies, and reading motivation when they read using print texts and tablet digital texts.

##### **4.5.1 Correlations between Reading Achievements and Reading Strategies**

The following part presents the results of the correlations between the reading achievements and reading strategies in both the print texts group and tablet digital texts group.

Table 9: Correlations between Reading Achievements and Reading Strategies

Variable	Group	Global Strategies	Problem Solving Strategies	Support Strategies	All strategies
Reading Achievements	Print Texts	.43**	.45**	.26	.50**
	Tablet Texts	.40*	.45**	.61**	.57**

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed)

Table 9 shows that the reading achievements correlated positively with “Global Strategies” in the two groups,  $r = 0.43$ ,  $n = 41$ ,  $p < 0.01$  in the print texts group, and  $r = 0.40$ ,  $n = 34$ ,  $p < 0.05$  in the tablet digital texts group. Similarly, the reading achievements correlated positively with the “Problem Solving Strategies”,  $r = .45$ ,  $n = 41$ ,  $p < 0.01$  in the print texts group and  $.45$ ,  $n = 34$ ,  $p < 0.01$  in the tablet digital texts group. On the contrary, the reading achievements had no significant correlation with “Support Strategies” in the print texts group,  $r = 0.26$ ,  $n = 41$ , at .05. While the reading achievements correlated positively with “Support Strategies”,  $r = 0.61$ ,  $n = 34$ ,  $p < .01$  in the tablet digital texts group. Additionally, the reading achievements correlated positively in all the 30 reading strategies in both groups,  $r = .50$ ,  $n = 41$ ,  $p < 0.01$  in the print texts group, and  $r = .57$ ,  $n = 34$ ,  $p < 0.01$  in the tablet digital texts group.

4.5.2 Correlations between Reading Achievements and Reading Motivation

The following section presents the results of the correlations between the reading achievements and reading motivation in both groups.

Table 10: Correlations between Reading Achievements and Reading Motivation in both Groups

Variable	Group	Efficacy Values	Attainment Values	Intrinsic Values	Extrinsic Values	Engagement Values	Overall
Reading Achievements	Print Texts	.36*	.36*	.51**	.39*	.45**	.49**
	Tablet Texts	.48**	.47**	.50**	.49**	.45**	.59**

\* Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).

Table 10 shows the correlations between the reading achievements and the reading motivation as follows;

- (a) The reading achievements correlated positively with “Efficacy Values” in the two groups.  $r = 0.36$ ,  $n = 41$ ,  $p < 0.05$  in the print texts group and  $r = 0.48$ ,  $n = 34$ ,  $p < 0.01$  for the tablet digital texts group.
- (b) The reading achievements correlated positively with “Attainment Values” in both groups.  $r = 0.36$ ,  $n = 41$ ,  $p < 0.05$  for the print texts group and  $r = 0.47$ ,  $n = 34$ ,  $p < 0.01$  for the tablet digital texts group.
- (c) The reading achievements correlated positively with “Intrinsic Values” in both groups.  $r = 0.51$ ,  $n = 41$ ,  $p < 0.01$  for the print texts group and  $r = 0.50$ ,  $n = 34$ ,  $p < 0.01$  for the tablet digital texts group.
- (d) The reading achievements correlated positively with “Extrinsic Values” in both groups.  $r = 0.39$ ,  $n = 41$ ,  $p < 0.05$  for the print texts group and  $r = 0.49$ ,  $n = 34$ ,  $p < 0.01$  for the tablet digital texts group.
- (e) The reading achievements correlated positively with “Engagement Values” in both groups,  $r = 0.45$ ,  $n = 41$ ,  $p < 0.01$  for the print texts group and  $r = 0.45$ ,  $n = 34$ ,  $p < 0.01$  for the tablet digital texts group.

(f) The reading achievements correlated positively with all motivation items (22 items) in both groups,  $r = 0.49$ ,  $n = 41$ ,  $p < 0.01$  for the print texts group and  $r = 0.59$ ,  $n = 41$ ,  $p < 0.01$  for the tablet digital texts group.

Overall, the reading achievements correlated positively with all the five subscales of the reading motivation and the whole scale in both groups.

### 4.5.3 Correlations between Reading Strategies and Reading Motivation

The previous two sections identified the correlations between the seven graders' reading achievements and the reading strategies from one side and the correlation between the reading achievements and the reading motivation from another. The following section identifies the correlations between the reading motivation and the reading strategies

A Pearson product-moment correlation coefficient was computed to assess the relationship between grade seven students' reading motivation five subscales and the three subscales of reading strategies used by the two groups.

Table 11: Correlations between Reading Strategies and Reading Motivation in both Groups

Strategies	Group	Efficacy Values	Attainme Values	Intrinsic Values	Extrinsic Values	Engagemen Values	All
Global	Print Texts	.37*	.34*	.20	.11	.25	.30
	Tablet Texts	.28	.32	.33	.45**	.42*	.45**
Problem Solving	Print Texts	.25	.22	.19	.14	.25	.26
	Tablet Texts	.26	.28	.37*	.56**	.59**	.52**
Support	Print Texts	.50**	.47**	.44**	.38*	.38*	.51**
	Tablet Texts	.39*	.39*	.44**	.42*	.36*	.49**

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 11 shows the following correlations between Reading Strategies and Reading Motivation.

(a) There was a positive significant correlation between "Global Strategies" and "Efficacy Values" in the print texts group,  $r = .37$ ,  $n = 41$ ,  $p < .05$ , but there was no correlation between these two variables in the tablet digital texts group,  $r = .28$ ,  $n = 34$  at .05.

(b) There was a positive significant correlation between "Global Strategies" and "Attainment Values" in the print texts group,  $r = .34$ ,  $n = 41$ ,  $p < .05$ , but there was no correlation between these two variables in the tablet digital texts group,  $r = .32$ ,  $n = 34$  at .05.

(c) There was no significant correlations between "Global Strategies" and "Intrinsic Values" in both groups,  $r = .20$ ,  $n = 41$  at .05 in the print texts group and  $r = .33$ ,  $n = 34$  at .05 in the tablet digital texts group.

(d) There was a positive significant correlation between "Global Strategies" and "Extrinsic Values" in the tablet digital texts group,  $r = .45$ ,  $n = 34$ ,  $p < .01$ , but there was no correlation between these two variables in the print texts group,  $r = .11$ ,  $n = 41$  at .05.

(e) There was a positive significant correlation between "Global Strategies" and "Engagement Values" in the tablet digital texts group,  $r = .42$ ,  $n = 34$ ,  $p < .05$ , but there was no correlation between these two variables in the print texts group,  $r = .25$ ,  $n = 41$  at .05.

(f) There was a positive significant correlation between "Global Strategies" and all the motivation subscales in the tablet digital texts group,  $r = .45$ ,  $n = 34$ ,  $p < .05$ , but there was no correlation between these two variables in the print texts group,  $r = .30$ ,  $n = 41$  at .05.



(g) There were no significant correlations between “Problem Solving Strategies” and “Efficacy Values” in both groups,  $r = .25$ ,  $n = 41$  at .05 in the print texts group, and  $r = .26$ ,  $n = 34$  at .05 in the tablet digital texts group.

(h) There were no significant correlations between “Problem Solving Strategies” and “Attainment Values” in both groups,  $r = .22$ ,  $n = 41$  at .05 in the print texts group and  $r = .28$ ,  $n = 34$  at .05 in the tablet digital texts group.

(i) There was a positive significant correlation between “Problem Solving Strategies” and “Intrinsic Values” in the tablet digital texts group,  $r = .37$ ,  $n = 34$ ,  $p < .05$ , but there was no correlation between the two variables in the print texts group,  $r = .19$ ,  $n = 41$  at .05.

(j) There was a positive significant correlation between “Problem Solving Strategies” and “Extrinsic Values” in the tablet digital texts group,  $r = .56$ ,  $n = 34$ ,  $p < .01$ , but there was no correlation between the two variables in the print texts group,  $r = .14$ ,  $n = 41$  at .05.

(k) There was a positive significant correlation between “Problem Solving Strategies” and “Engagement Values” in the tablet digital texts group,  $r = .59$ ,  $n = 34$ ,  $p < .01$ , but there was no correlation between the two variables in the print texts group,  $r = .25$ ,  $n = 41$  at .05.

(l) There was a positive significant correlation between “Problem Solving Strategies” and all the subscales of motivation in the tablet digital texts group,  $r = .52$ ,  $n = 34$ ,  $p < .01$ , but there was no correlation between these two variables in the print texts group,  $r = .26$ ,  $n = 41$  at .05.

(m) There were positive correlations between “Support Strategies” and “Efficacy Values” in both groups,  $r = .50$ ,  $n = 41$ ,  $p < .01$ , in the print texts group and,  $r = .39$ ,  $n = 34$ ,  $p < .05$ , in the tablet digital texts group.

- (n) There were positive correlations between “Support Strategies” and “Attainment Values” in both groups,  $r = .47$ ,  $n = 41$ ,  $p < .01$ , in the print texts group and,  $r = .39$ ,  $n = 34$ ,  $p < .05$ , in the tablet digital texts group.
- (o) There were positive correlations between “Support Strategies” and “Intrinsic Values” in both groups,  $r = .44$ ,  $n = 41$ ,  $p < .01$ , in the print texts group and,  $r = .44$ ,  $n = 34$ ,  $p < .01$ , in the tablet digital texts group.
- (p) There were positive correlations between “Support Strategies” and “Extrinsic Values” in both groups,  $r = .38$ ,  $n = 41$ ,  $p < .05$ , in the print texts group and,  $r = .42$ ,  $n = 34$ ,  $p < .05$ , in the tablet digital texts group.
- (q) There were positive correlations between “Support Strategies” and “Engagement Values” in both groups,  $r = .38$ ,  $n = 41$ ,  $p < .05$ , in the print texts group and,  $r = .36$ ,  $n = 34$ ,  $p < .05$ , in the tablet digital texts group.
- (r) There were positive correlations between “Support Strategies” and all the subscales of reading motivation in both groups,  $r = .51$ ,  $n = 41$ ,  $p < .01$ , in the print texts group and  $r = .49$ ,  $n = 34$ ,  $p < .01$ , in the tablet digital texts group.

To sum up the relationships between the reading strategies and the reading motivation in both groups, the following correlations were observed.

“Global Strategies” correlated positively with “Efficacy Values”, and “Attainment Values”, and they had no correlations with “Intrinsic Values”, “Extrinsic Values” and “Engagement Values” in the print texts group. Additionally, “Global Strategies” correlated positively with the entire scale of the reading motivation and two subscales; “Extrinsic Values”, and “Engagement Values”, but “Global Strategies” had no correlations with three motivation subscales; “Efficacy Values”, “Attainment values” and “Intrinsic Values” in the tablet digital texts group.

“Problem Solving Strategies” had no correlations with the entire scale and subscales of motivation in the print texts group, while they had positive correlations with the entire scale of motivation and three subscales; “Intrinsic Values” “Extrinsic Values”, and “Engagement Values” but they had no correlations with “Efficacy values” and “Attainment Values”.

“Support Strategies” correlated positively with the five subscales and the entire scale of reading motivation in both print texts group and tablet digital texts group.

#### **4.5.4 Overall Correlations between Reading Achievements, Strategies, and Motivation.**

After identifying the correlations between the reading achievements, the subscales of reading strategies, and the subscales of reading motivation, a Pearson product-moment correlation coefficient was computed to assess the relationship between the reading achievements, the entire scale of reading strategies, and the entire scale of the reading motivation.

Table 12: Correlations between Reading Achievements, Strategies, and Motivation

Variables	Group	1	2	3
1-Reading Achievements	Print Texts			
	Tablet Digital Texts			
2-Reading Strategies	Print Texts	.50**		
	Tablet Digital Texts	.56**		
3-Reading Motivation	Print Texts	.49**	.45**	
	Tablet Digital Texts	.59**	.57**	

\*. Correlation is significant at the 0.05 level (2-tailed).  
\*\*. Correlation is significant at the 0.01 level (2-tailed).

Table 12 shows that there was a positive correlation between the reading achievements and reading strategies in both groups,  $r = .50$ ,  $n = 41$ ,  $p < .01$  for the print texts group, and,  $r = .56$ ,  $n = 34 < .01$  for the tablet digital texts group. Similarly, the reading achievements correlated positively with the reading motivation,  $r = .49$ ,  $n = 41$ ,  $p < .01$  for the print texts group, and,  $r = .59$ ,  $n = 34 < .01$  for the tablet digital texts group. Additionally, the reading strategies correlated positively with the reading motivation,  $r = .45$ ,  $n = 41$ ,  $p < .01$  for the print texts group, and,  $r = .57$ ,  $n = 34 < .01$  for the tablet digital texts group. Overall results show that the correlation coefficients in the tablet digital texts groups were higher than the print texts group.

4.6 Summary of Results

The results of the first research question showed that the seventh grade students using tablet digital texts performed better than their counterparts using print texts in the reading achievements.

The results of the second research question showed that the usage of three subscales of the reading strategies, “Global Strategies”, “Problem Solving Strategies” and “Support Strategies” fell within the high usage category in the tablet digital texts

group, while it ranged from moderate to high usage category in the print texts group. Only “Support Strategies” in the print texts fell in a moderate usage group. This indicates that seventh grade students used these strategies on a regular basis. “Problem Solving Strategies” were reported for the highest followed by “Global Strategies” and the lowest mean was observed in the use of “Support Strategies”. Additionally, the means of all “Global Strategies” and “Support Strategies” were observed higher in the tablet digital texts group than the print texts group. Besides, all “Problem Solving Strategies” in the tablet digital texts group were reported higher than the print texts group except for one “I adjust my reading speed according to what I’m reading.” which was higher in the Print Texts group. Finally, the students in the tablet digital texts group scored higher than their counterparts in the print texts group in all the subscales of the reading strategies and the entire scale.

The results of the third research questions showed that the students in the tablet digital texts group scored higher than the students in the print texts group in all the five subscales of the reading motivation. In addition, all the means of the five motivation subscales in both groups fell in the high level except for the engagement subscale for the print texts group that was moderate.

The results of the fourth and fifth research questions showed the following results. For example, the reading achievements correlated positively with the three subscales and the whole scale of the reading strategies except for the “Support Strategies” that had no correlation with the reading achievements. In addition, the reading achievements correlated positively with all the five subscales of the motivation and the whole scale in the print texts group and tablet digital texts group.

“Global Strategies” correlated positively with two subscales of the reading motivation (Efficacy Values, and Attainment Values), but “Global Strategies” had no

correlations with the entire scale of the reading motivation and the three motivation subscales (Intrinsic Values, Extrinsic Values and Engagement Values) in the print texts group. Additionally, "Global Strategies" correlated positively with the entire scale of reading motivation and two subscales; "Extrinsic Values", and "Engagement Values", but "Global Strategies" had no correlations with three motivation subscales; "Efficacy Values", "Attainment Values" and "Intrinsic Values" in the tablet digital texts group.

"Problem Solving Strategies" had no correlations with the entire scale of motivation and the five motivation subscales in the print texts group, while "Problem Solving Strategies" with the entire scale of motivation and three subscales (Intrinsic Values Extrinsic Values, and Engagement Values) but they had no correlations with "Efficacy Values" and "Attainment Values".

"Support Strategies" correlated positively with the five subscales and the entire scale of reading motivation in both print texts group and tablet digital texts group.

Overall, the three variables; the reading achievements, the reading strategies (The entire scale) and the reading motivation (The entire scale) had positive significant correlations. However, the correlation coefficients in the tablet digital texts groups were higher than the print texts group in the three associations.

## **Chapter 5: Discussion and Conclusion**

### **5.1 Introduction**

This chapter highlights and discusses the main results of the five research questions in the study in light of literature, theoretical backgrounds and other relevant research studies. The results are thoroughly discussed and presented separately before being connected together. The results of the present study are also compared and contrasted with the results of relevant studies in different contexts. Then, conclusion of the entire research will be drawn. Based on the results of the five research questions, practical suggestions, implementations and recommendations for the fields of literacy education and research are provided. Besides, the limitations are acknowledged and future research opportunities are offered to fill the research gap locally and beyond.

This study was an attempt to explore the impact of Tablet Digital Texts versus Print Texts on seventh grade students' reading achievements, reading strategies and reading motivation in both the tablet digital texts group and the print texts group; it also explored the associations and relationships between the reading achievements, reading strategies and reading motivation in and between the two groups.

### **5.2 Discussion**

The first research question examined the seventh grade students' reading achievements as measured by Pearson Reading Achievements Test when reading the tablet digital texts and print texts. The results of the first research question showed



that the scores of the reading achievements pretest in the tablet digital texts group and print texts group were very similar. This was an indicator that the two groups (Tablet digital texts Group and Print texts Group) are equivalent and homogeneous in the reading achievements before carrying out the study as shown in Table 3. Another finding was that the results showed that the seventh grade students in the tablet digital texts group scored higher than their counterparts in the print texts group in the reading achievements as shown in the posttest scores.

These results could be interpreted as tablet digital texts are extensively used by the students who have become digitally native. Additionally, tablet digital texts have some applications that help the students improve their reading skills such as online dictionaries as well as other applications that provide the students with synonyms and antonyms. Besides, the tablet interactivity and accessibility to rich instructional resources foster the students reading comprehension and increase the enjoyment and engagement.

To discuss the raw scores of the reading achievements of both tablet digital texts group and print texts group; it was found out that the raw scores of the pretest of the reading achievements were in both groups around 67/100 that is rated D+ according to the marking systems of both schools. It is important to note that the two schools that participated in this study had been evaluated and inspected and these schools obtained good scores in teaching and learning. Additionally, these two schools have been accredited internationally as effective in teaching and learning by AdvancED International Organization in 2015. They were also accredited as effective schools locally by the Inspection Team of UAE Ministry of Education in 2015.

The raw scores of the reading achievements of both groups confirmed what was introduced in the research problem statement that there had been weaknesses in the reading skill. Even the posttest average raw scores were 72/100 in the print texts group and 80/100 in the tablet digital texts group. Though the tablet digital texts group performed better than the print texts group; the language proficiency of the students should have been better in such good schools where English is the medium of instruction for all subjects. The difference of the mean scores between the two groups in favor of tablet digital texts group, encourages educators to consider the tablet integration in classroom in order to improve the reading difficulties that students are experiencing at the school levels. The rich instructional resources of tablets as well as the students' strong desires of tablet uses are to be regarded as instructional tools of challenging the students' reading difficulties and increase their achievements and engagement in learning reading.

The results of the first research question are congruent with the findings of several research studies; but, they are inconsistent with others in different contexts.

These results confirmed the findings of Ekkers (2014) who emphasized the positive impact of tablet digital texts on reading achievements. The results of Ekkers (2014) stated that content and design of iPad app could effectively increase the reading and writing achievements of the primary school students in Northern California.

Another study in the USA context is in line of the results of the first research question about the positive impact of tablet digital texts on the students' reading achievements. Roblyer and Doering (2013) emphasized that technology integration such as iPads and other devices increased students' reading achievements and reading comprehension. Similarly, Smaldino, Lowther, and Russell (2012) found out

the same results of the present study about the positive effects of tablet digital texts on reading achievements. They confirmed that tablets enhanced students' reading comprehension since tablets could help students transfer the knowledge in their short-term memory into their long-term memory.

So far, other research studies were in line with the results of this study regarding the impact of Tablet Digital Texts on students' reading achievements. For example, Thoermer and Williams (2012) stated that using technology had positive effects on enhancing the reading skill of the students. They clarified that incorporating fluency lessons using tablet digital texts could strengthen students' accuracy, automaticity, and fluency. In turn, "as students' reading fluency improves, their comprehension is also likely to improve, thus furthering their reading enjoyment and positively affecting students' reading achievements." (p. 445). These effects resulted in the tablet interactivity and accessibility to rich instructional resources that enhance literacy skills as also confirmed by Bennett (2011). Furthermore, smart technology is beneficial for differentiating instruction and increasing the students' literacy achievements and engagement, especially in language lesson (Wellings & Levine, 2010).

Similar to the previous studies' results, Bebell, Dorris, and Muir, (2012) found out that Australian students who used the iPad tablets had gained greater scores than those used the print texts. Additionally, Ertem (2010) in the Turkish context found out that there was a statistically difference ( $<.05$ ) in fourth grade students' reading comprehension scores on a multiple choice comprehension test between students reading electronic storybooks and traditional print storybooks.

On the other hand, the results of the first research question were inconsistent with the findings of other studies conducted locally and globally.

In the UAE context, Patronis (2014) carried out a study to examine the impact of the pedagogical potential of integrating tablets on undergraduate students' performance in writing and reading comprehension. The results of Patronis' (2014) study showed no significant positive impact on the students' reading and writing standardized test results.

Another study in the USA context carried out by Fox (2014) and its results were not in agreement with the results of this study as it found out that technology cannot completely take over the traditional way of reading and writing. Fox (2014) concluded that in order to use technology to the fullest potential, students must have the basic skills of reading and writing that only traditional practices can provide them with.

The findings of Wells' (2012) study were different from the results of the present study. His study's results showed no statistically significant difference in reading comprehension levels based on book format between the students reading digital texts compared to students in the print texts group using the print texts

In the Chinese context, an experiment was conducted to investigate the effects of the reading comprehension across paper, tablets, and computers. Its findings were not in agreement with the present study as they indicated that the paper group performed significantly better than the tablet group in reading comprehension (Chen, Cheng & Chang, 2014).

Another Norwegian study had opposite results of the present study. This study showed that the students who read texts in print scored significantly higher on the reading comprehension test than students who read the digital texts (Mangen et al, 2013).

Some researchers stand between the two positions as they were not for or against but they called for patience and more research in smart technology integration. For example, Pollitt (2013) and Falloon (2013) confirmed that the effectiveness of tablets and their role in classroom are still in need of more research to guide the practices. They added that the impact of the tablet and its applications as effective educational and instructional tools is still in its infancy due to the newness of the tablets in the field of education.

This section highlights the second research question whose results showed that the three subscales of the reading strategies were reported as high frequently used strategies in the tablet digital texts group. The overall means of the three subscales were reported 4.19 for all “Problem Solving Strategies”, 4.11 for “Global Reading Strategies”, and 4.01 for “Support Reading Strategies”. The means of the three subscales were above 3.5 which means that it fell in the high frequently used category.

The three subscales of the reading strategies were reported moderate and high frequently used strategies in the print texts group. The overall means of the three subscales were 3.76 for “Problem Solving Strategies”, 3.56 for “Global Strategies” and 3.49 for “Support Strategies”.

The overall means of “Global Strategies”, and “Problem Solving Reading” were above 3.5 which means that it fell in the high frequently used category, while the overall mean of the “Support Strategies” was below 3.5 that mean it fell in the moderate frequently used category.

Ranking the sequence of the most frequently reported using strategies was the same in both tablet digital texts group and print texts group respectively as; “Problem Solving Strategies”, “Global Strategies” and “Support Strategies”. Students in both

groups tended to use “Problem Solving Strategies” higher than the “Global Strategies” and “Support Strategies”.

To sum up, the seventh grade students in the tablet digital texts group performed higher than their counterparts in the print texts group in the three subscales of the reading strategies. The seventh grade students displayed awareness of all the thirty targeted strategies. In addition, the seventh grade students reported the sequence of importance to the three subscales of reading strategies in the survey: “Problem Solving Strategies”, followed by “Global Strategies”, and “Support Strategies”.

The high and moderate awareness of the reading strategies by students in both groups as measured by the Survey of Reading Strategies could be interpreted from different perspectives. For example, the students were using these strategies in a regular basis. In addition, these reading strategies are incorporated explicitly and implicitly in the curriculum and the students had acquired them unconsciously. In fact, these strategies have been actually incorporated in the Common Core State standards and the curriculum that have been used in these schools.

Another interpretation of these results is that the seventh grade students might not report their use of these reading strategies accurately or might rate these strategies higher than what they actually use. Additionally, it could be argued that the seventh grade students might know these strategies but they were actually not using them as high as they reported. Also, the raw scores of students’ reading achievements as discussed formerly, were inconsistent with the high awareness of the strategy use since many research studies emphasized the positive impact of the reading strategies on the reading achievements.

Despite this interpretation, it is beneficial to find the results of this study had been supported by some researchers' findings. For instance, the reported strategies by the participants in this study in both groups were partially in consistent with the findings of the study of Sheorey and Mokhtari (2001). For example, none of the reported strategies fell in the low usage group. Similar to the findings of the current study, all the strategies as reported by ESL students in the study of Sheorey and Mokhtari (2001) were moderate and high; 35% of the strategies fell in the high usage group, while 65% of the strategies were in the moderate usage of group. The results of the reported strategies in the present study were higher. All the strategies reported by the participants in the tablet digital texts group fell in the high usage category. In the print texts group, 53% of the strategies were in the high usage, while 47% of the strategies were in the moderate usage. Additionally, the overall means of all reading strategies were reported 3.60 for the print texts group and 4.10 for the tablet digital texts group in the present study. These mean scores seem that they are higher than the overall mean (3.08) of all reading strategies reported in the results of Sheorey and Mokhtari (2001).

The high and moderate main scores of the reading strategies in the present study were close to the research results of Al-Sobhani (2013) that found out that all three subscales of reading strategies fell in high frequency of usage with means ranged between 3.53 and 3.94.

The results of this study are partially consistent with the results of Alsheikh and Mokhtari (2011) that showed the overall mean of strategy use was high when reading in English (overall  $M = 3.58$ ). The results of Alsheikh (2011) were in line with the results of the current study as he found out that when the students reported strategies used in English, 60% of the thirty strategies fell in the high usage group



(mean of 3.5 or above), while 40% of the strategies were of medium usage. Congruent with the present study, none of the reported strategies fell in the low usage group.

This present study's results are also partially in line with the results of Tavakoli (2014) that showed a moderate aware of reading strategies (12 high, 9 moderate and 9 low) by Iranian EFL students.

Since the results of this study reported that the students in the tablet digital texts group scored higher than their counterparts in the print texts group in the reading achievements, the students in the tablet digital texts group are considered more proficient readers than the students in the print texts group who are less proficient readers. Moreover, the more proficient students of the tablet digital texts group scored higher than the less proficient students of the print texts group in the reading strategies.

If it is the case, the results of the study were supported by Tavakoli (2014) who found out that the students' knowledge of metacognitive reading strategies were significantly impacted by their levels of English proficiency. In addition, Sheorey and Mokhtari (2001) confirmed the positive relationship between students' high-reading-ability and high reported usage for cognitive and metacognitive reading strategies. Furthermore, Pookcharoen (2009) reached the same findings of this study that the proficient readers performed higher than the less proficient ones in all the three subscales of the Reading Strategies.

Regarding the most frequently used strategies, students in both groups tended to use "Problem solving Strategies" higher than "Global Strategies" and "Support Strategies". This result was consistent with many researches used SORS and found out that the participants used "Problem Solving Strategies" more than "Global

Strategies” and “Support Strategies” (Sheorey & Mokhtari, 2001; Pookcharoen, 2009; Alsheikh, 2011; Al-Sobhani, 2013; Meniado; 2016).

The present study does not coincide with the results of Tavakoli's (2014) study that reached the opposite results. He found out that the most frequently used strategies were the “Support Strategies”, while they were the least frequently used strategies in the current study. Additionally, “Problem-Solving Strategies” were reported the least frequently used strategies in Tavakoli's (2014) study, but they were the most frequently used strategies in the current study and other studies. “Global Strategies” ranked the same in both studies. Jamshidi (2013) found out that the Problem-Solving Strategies (3.55) were the most, but reversed the order of the other two strategy types with “Support Strategies” ( $M=3.43$ ) next and then “Global Strategies” ( $M = 3.15$ ).

The results of the third research question showed differences in all the five subscales of the reading motivation between the seventh grade students using the print texts ( $M=3.64$ ) and those who are using tablet digital texts ( $M=4.16$ ) in favor of tablet digital texts group. It is observed that all the means of the five motivation subscales fell in the high level (Mean = 3.5 or above) in both groups except for the engagement values of the print texts group that were moderate (Mean = 2.5 - 3.4).

The ranking of the subscales of the reading motivation rated by students in the tablet digital texts group was observed respectively as follows: “Extrinsic Values” ( $M=4.21$ ), “Reading Efficacy Values” ( $M=4.17$ ), “Attainment Values” ( $M=4.15$ ), “Intrinsic values” ( $M=4.07$ ) and “Engagement Values” ( $M=4.07$ ).

In the print texts group, the ranking was reported as follows: “Extrinsic Values” ( $M=3.76$ ), “Intrinsic Values” ( $M=3.66$ ), “Reading Efficacy Values” ( $M=3.58$ ), “Attainment values” ( $M=3.57$ ) and “Engagement Values” ( $M=3.29$ ).

“Extrinsic Values” were observed the highest subscale of the reading motivation and “Engagement Values” were the lowest in the two groups. Additionally, “Engagement Values” were scored much better in the tablet digital texts group than the print texts group. This reflects that the tablet digital texts are a more engaging medium of learning than the print texts.

In fact, the results of the reading motivation were supported partially or completely by previous studies and statistics. For example, the main findings of Picton (2014) are in line with the results of the present study that the tablet digital group students scored better than those using the print texts. Picton (2014) highlighted that young people aged 8 to 16 preferred reading on screen of computers and other electronic devices to reading on paper. He found out that “More than half (52.4%) said that they would rather read using electronic devices, compared to just under a third (32%) who said they would rather read in print (pp.4-5). In addition, Picton (2014) added that the proportion of students who felt that eBooks would have a positive effect on their motivation to read increased from 33% to 49% between 2012 and 2014.

The findings of Webb’s (2012) study also coincide with the results of this study regarding the higher scores of Tablet’s students in the reading achievements and reading motivation. Webb (2012) found that students using the tablets demonstrated high motivation and a demand for its use and they had a 6% greater chance of passing the Reading Test. Furthermore, Larson (2010) found that electronic texts can make the reading experience more individualized, interactive, and engaging. This was exactly found in this study that the tablet digital texts group scored higher than the print texts group in the subscale of “Engagement Values”.

This result was confirmed by Reinking (2011) that tablets increased the engagement of struggling readers and enhanced their reading comprehension levels.

Similar to the results of the present study that showed differences in all subscales of the reading motivation between the tablet digital texts group and the print texts group in favor of the first group, Eagleton and Dobler (2007) confirmed that tablets were more advantageous than printed texts as they enabled students to physically interact with and manipulate texts and transform them to meet their needs and interests.

Consistent with the present study's results of the tablet digital texts group students whose "Extrinsic Values" ( $M=4.21$ ) and Intrinsic Values ( $M=4.07$ ) were rated higher than the print texts group students, McElvany and Kortenbruck (2010) found out that extrinsic and intrinsic values affected positively students' motivation to read.

Marinak and Gambrell (2007) confirmed that students preferred to engage in a reading task if they are intrinsically motivated and this increased their academic achievements related to reading. This was reflected in the results of this study that showed the subscale of "Engagement Values" ( $M=4.06$ ) was similar to "Intrinsic Values" ( $M=4.07$ ).

In contrast, the results of this study regarding reading motivation contradicted the findings of other studies. For example, Aydemir and Öztürk (2012) found out that there was no statistically difference between the reading motivation of students who read the texts from the screen and those who read the printed materials. They concluded that reading from the screen did not have a meaningful effect on students' reading motivation. This was the opposite of the results of the present study that

showed the students in tablet digital texts group scored higher than the print texts group in the reading motivation.

Becker et al. (2010) found out that the impact of extrinsic reading motivation on reading achievements and students' engagement was negative. This is also contradicting with the results of this study that showed the subscale of "Extrinsic Values" obtained the highest mean score of all the five subscales of the reading motivation in both groups.

The results of the four and fifth research questions include the three types of correlations between the reading achievements, reading strategies and reading motivation in both tablet digital texts group and print texts group. Based on the results of the study, the following correlations are observed. First, the reading achievements correlated positively with "Global Reading Strategies" in the print texts group ( $p < 0.01$ ), and the tablet digital texts group ( $p < 0.05$ ). Second, the reading achievements correlated positively with "Problem Solving Strategies" in both groups ( $p < 0.01$ ). Third, the reading achievements correlated positively with the "Support Reading Strategies" in the tablet digital texts group ( $p < .01$ ), but had no significant correlation with "Support Reading Strategies" in the print texts group. Fourth, the reading achievements correlated positively in all the 30 reading strategies in both groups ( $p < 0.01$ ).

It is important to compare the correlations between the reading achievements and reading strategies between the two groups. It is observed that the correlations between the reading achievements and "Global Reading Strategies" were higher in the print texts group ( $r=.43$ ) than the tablet digital texts group ( $r=.40$ ). Besides, the correlations between the reading achievements and "Support Reading Strategies" were higher in the tablet digital texts group ( $r=.61$ ) but there was no correlation in the

print texts group ( $r=.26$ ). The correlations with "Problem Solving Strategies" were the same in the two groups ( $r=.45$ ). The overall correlations between the reading achievements and the entire scale of reading strategies in the tablet digital texts group ( $r=.57$ ) were higher than the print texts group ( $r=.50$ ).

Regarding the results of the correlations between the reading achievements and reading motivation. The results showed positive correlations between the reading achievements and the five subscales of reading motivation. For example, there were significant correlations ( $p<.01$ ) between the reading achievements and all the five subscales of reading motivation and the entire scale in the two groups. In addition, there were significant correlations ( $p<.01$ ) between the reading achievements, and the scales of "Intrinsic Values" and "Engagement Values" in the print texts group. Moreover, there were significant correlations ( $p<.05$ ) between the reading achievements and the other three subscales; "Reading Efficacy", "Extrinsic Values" and Attainment Values in the print texts group. Furthermore, there were significant correlations ( $p<.01$ ) between the reading achievements and all the five subscales of reading motivation in the tablet digital texts group.

It is beneficial to compare the correlations between the reading achievements and reading motivations between the two groups. Firstly, the results of the study showed that the correlation between the reading achievements and "Efficacy Values" in the tablet digital texts group ( $r=.48$ ) was higher than the print texts group ( $r=.36$ ). Secondly, the correlation between the Reading Achievements and "Attainment Values" in the tablet digital texts group ( $r=.47$ ) was higher than the print texts group ( $r=.36$ ). Thirdly, the correlation between the reading achievements and "Intrinsic Values" in the tablet digital texts group ( $r=.51$ ) was slightly higher than the print texts group ( $r=.50$ ). Fourthly, the correlation between the reading achievements and



“Extrinsic Values” in the tablet digital texts group ( $r=.49$ ) was higher than the print texts group ( $r=.39$ ). Fifthly, the correlation between the reading achievements and “Engagement Values” was the same in both groups ( $r=.45$ ). Sixthly, the correlations between the reading achievements and all the entire scale of the reading motivation in the tablet digital texts group ( $r=.59$ ) were higher than the print texts group ( $r=.49$ ).

It is observed that there are positive significant correlations between the reading achievements and all the five subscales of the reading motivation and the entire scale in the print texts group and the tablet digital texts group. The tablet digital texts group students scored higher than their counterpart students in the print texts group in “Reading Efficacy Values”, “Attainment Values” and “Extrinsic Values” as well as the entire scale of the reading motivation. In addition, their scores are nearly the same in “Intrinsic Values” and “Engagement values”.

The following section highlights the results of the correlations between the Reading Strategies and Reading Motivation. The results are observed as follows.

“Global Reading Strategies” had significant correlations ( $p<.05$ ) with two subscales: “Efficacy Values”, and “Attainment Values” in the print texts group. No correlation was observed with “Intrinsic Values”, “Extrinsic Value” and “Engagement Values” as well as the entire scale of motivation in the print texts group. For the tablet digital texts group, there were significant correlations ( $p<.01$ ) between “Global Strategies” and the two subscales of “Extrinsic Values” and “Engagement Values”. No correlation was reported with “Efficacy Values”, “Attainment Values”, and “Intrinsic Values”.

“Problem Solving Strategies” had significant correlations ( $p<.01$ ) with two subscales: “Extrinsic Values” and “Engagement Values” as well as the entire scale of the reading motivation in the tablet digital texts group. There was a significant



correlation ( $p < .05$ ) between “Problem Solving Strategies” and “Intrinsic Values”. No correlation was reported with “Efficacy Values”, and “Attainment Values”. In the print texts group; no correlation was reported with all the entire scale and subscales of the reading motivation.

“Support Reading Strategies” had significant correlations ( $p < .01$ ) with three subscales, “Efficacy Values”, “Attainment Values” and “Intrinsic Values” as well as the entire scale of the reading motivation in the print texts group. Additionally, “Support Strategies” had significant correlations ( $p < .05$ ) with “Extrinsic Values” and “Engagement Values” in the print texts group. In the tablet digital texts group, there were significant correlations ( $p < .01$ ) between “Support Strategies” and “Intrinsic Values” and the entire scale of the reading motivation. They had also significant correlations ( $p < .05$ ) with the other four subscales (Efficacy Values, Attainment Values, Extrinsic Values and Engagement Values).

After displaying the correlations between the reading strategies and reading motivation, it is helpful to compare the results between the two groups as follows.

The correlation between “Global Reading Strategies” and “Efficacy Values” in the print texts group ( $r = .37$ ) was higher than the tablet digital texts group ( $r = .28$ ). Secondly, the correlation between “Global Reading Strategies” and “Attainment Values” in the print texts group ( $r = .34$ ) was higher than the tablet digital texts group ( $r = .32$ ). Thirdly, the correlation between “Global Reading Strategies” and “Intrinsic Values” in the tablet digital texts group ( $r = .33$ ) was higher than the print texts group ( $r = .20$ ). Fourthly, the correlation between “Global Reading Strategies” and “Extrinsic Values” in the tablet digital texts group ( $r = .45$ ) was higher than the print texts group ( $r = .11$ ). Fifthly, the correlation between “Global Reading Strategies” and “Engagement Values” in the tablet digital texts group ( $r = .42$ ) was higher than the

print texts group ( $r=.25$ ). Sixthly, the correlations between “Global Strategies” and all the entire scale of the reading motivation in the tablet digital texts group ( $r=.45$ ) were higher than the print texts group ( $r=.30$ ).

The correlation between “Problem Solving Strategies” and “Efficacy Values” in the tablet digital texts group ( $r=.26$ ) was higher than the print texts group ( $r=.25$ ). Secondly, the correlation between “Problem Solving Strategies” and “Attainment Values” in the tablet digital texts group ( $r=.28$ ) was higher than the print texts group ( $r=.22$ ). Thirdly, the correlation between “Problem Solving Strategies” and “Intrinsic Values” in the tablet digital texts group ( $r=.37$ ) was higher than the print texts group ( $r=.19$ ). Fourthly, the correlation between “Problem Solving Strategies” and “Extrinsic Values” in the tablet digital texts group ( $r=.56$ ) was higher than the print texts group ( $r=.14$ ). Fifthly, the correlation between “Problem Solving Reading Strategies” and “Engagement Values” in the tablet digital texts group ( $r=.59$ ) was higher than the print texts group ( $r=.25$ ). Sixthly, the correlations between “Problem Solving Strategies” and all the entire scale of the reading motivation in the tablet digital texts group ( $r=.52$ ) were higher than the print texts group ( $r=.26$ ).

The correlation between “Support Strategies” and “Efficacy Values” in the print texts group ( $r=.50$ ) was higher than the tablet digital texts group ( $r=.39$ ). Secondly, the correlation between the “Support Strategies” and “Attainment Values” in the print texts group ( $r=.47$ ) was higher than the tablet digital texts group ( $r=.39$ ). Thirdly, the correlation between “Support Reading Strategies” and “Intrinsic Values” was the same in both groups ( $r=.44$ ). Fourthly, the correlation between “Support Reading Strategies” and “Extrinsic Values” in the tablet digital texts group ( $r=.42$ ) was higher than the print texts group ( $r=.38$ ). Fifthly, the correlation between “Support Strategies” and “Engagement Values” in the print texts group ( $r=.38$ ) was

higher than the tablet digital texts group ( $r=.36$ ). Sixthly, the correlations between "Support Strategies" and all the entire scale of the reading motivation in the print texts group ( $r=.51$ ) were higher than the tablet digital texts group ( $r=.49$ ).

It is observed that the correlations between the reading motivation and the subscales of "Global Reading Strategies" and "Problem Solving Strategies" were higher in the tablet digital texts group than the print texts group. Moreover, the correlation with "Support Reading Strategies" in the print texts group was higher than the tablet digital texts group. In addition, no correlation was reported between the reading motivation and the subscales of "Global Strategies" and "Problem Solving Strategies" in the print texts group.

After discussing the results of the correlations between the reading achievements, reading strategies and reading motivation, the following section sums up the three types of correlations and link them together.

The results showed significant correlations ( $p<.01$ ) between the three variables: the reading achievements, reading strategies and reading motivation in the print texts group and tablet digital texts. Furthermore, the correlations between the reading achievements and reading strategies were higher in the tablet digital texts group ( $r=.56$ ) than the tablet digital texts group ( $r=.50$ ). The correlations between the reading achievements and reading motivation in the tablet digital texts group ( $r=.59$ ) were higher than the print texts group ( $r=.49$ ).

The correlations between the reading motivation and reading strategies were higher in the tablet digital texts group ( $r=.57$ ) than the print texts group ( $r=.45$ ).

The overall results in the three correlations in the print texts group and the tablet digital texts group were positive. It was also found out that the correlation coefficients in the tablet digital texts group were higher than the print texts group in

most subscales and the entire scales in the three variables: the reading achievements, reading strategies and reading motivation.

To discuss the correlations between the three dependent variables in both groups, the results of this study showed that all the three main correlations were positive in most relationships. This means that students who were aware of the reading strategies tended to have higher reading achievements test scores and vice versa. In addition, seventh grade students, who were highly motivated, tended to have higher reading achievements test scores and vice versa. Moreover, seventh grade students, who were motivated, tended to have higher awareness of the Reading Strategies and vice versa.

The results of the fifth research question were supported by the results of some research studies, but they were inconsistent with others.

One of these studies conducted by Ciampa (2012) found out that the use of digital eBooks increased the students' reading motivation in general and struggling readers in particular; he added that student's interaction with the digital eBooks increased their interest and engagement in reading. This result is similar to the present study's results that showed correlation between the reading achievements and the reading motivation was higher in the tablet digital texts group than the print texts group.

The findings of the study of Fox (2014) concluded through his review of some research studies that technology has had an overall positive effect on reading comprehension and motivation. Turner (2011) also found out that students who experienced digital literacies showed higher motivation and higher levels of critical thinking in reading and writing achievements more than students using traditional literacies. Both the studies of Turner (2011) and Fox (2014) provided evidence which

support the use of both technology and traditional text simultaneously when teaching literacy skills. These two studies' results are in line with the results of the present study that showed positive significant correlations between the reading achievements and reading motivation in both groups, but the correlation in the tablet digital texts group ( $r=.59$ ) was higher than the print texts group ( $r=.49$ ).

So far, the relationships between the three dependent variables including the reading achievements, motivation and strategies were also in line with the results of other research studies. Their results showed positive relationships between the reading achievements and motivation; students who had higher scores on motivation surveys showed higher levels of reading achievements (Smith et al., 2012, Guthrie & Wigfield, 1997; Wigfield, 1999; Guthrie, 2004).

Similar to the results of the present study, Meniado (2016) conducted a study that sampled Saudi elementary students. His study results found out a positive significant correlation between reading strategies and reading motivation.

The positive significant correlations between the reading achievements, reading strategies and reading motivation in this study are also similar to the findings of Jamshidi (2013) that the Iranian students' awareness of reading strategies correlated positively with their reading motivation and reading comprehension abilities. In addition, Ahmadi (2013) reached to similar findings in the Malaysian context that reading motivation had a positive impact on students' reading comprehension and consequently on their reading achievements.

Another Turkish study coincides the results of the present study in regard to the positive significant correlations between the reading achievements and metacognitive reading strategies. Memiş and Bozkurt (2013) found out moderate and

positive correlations between reading comprehension and metacognitive reading comprehension, internal-external motivation and reading level.

The findings of a study conducted by Becker, McElvany and Kortenbruck (2010) showed that extrinsic and intrinsic motivations positively affected students' motivation to read. In addition, Marinak and Gambrell (2007) confirmed that students preferred to engage in a reading task if they are intrinsically motivated and this increased their academic achievements related to reading. Marinak and Gambrell (2007) added that "Without the intrinsic motivation to read, students may never reach their full potential as literacy learners" (p.9). The findings of these three studies are similar to the results of this present study that showed positive significant correlations between the reading achievements and "Intrinsic Values" , "Extrinsic Values" and "Engagement Values" in both groups.

The results of the present study showed that the reading achievements and "Extrinsic Values" had the highest correlation in the two groups. This result is the reverse of the findings of Becker et al. (2010) that the impact of extrinsic reading motivation on the reading achievements and students' engagement was negative.

In contrast, the results of the resent study in regard to the positive significant correlations between the reading achievements and reading motivation were inconsistent with the results of Grimshaw, Dungworth and McKnight (2007). These researchers confirmed that motivation was not found through the use of traditional texts compared to electronic texts. The explanation for this finding is that the digital text has some features "such as word pronunciation, narration, sound effects and animations, which support the text, all help to remove the effort from decoding individual words and allow the child to focus on meaning" (Grimshaw et al. p. 584). In addition, digital texts have more advanced features such as text to speech and



highlighting of words, showing synonyms and antonyms, grammar and spelling check, translate...etc. These features as stated by (Grimshaw et al p. 584) increased the students' comprehension and their motivation to read.

Despite their clarification of the support of these digital features, the findings of Grimshaw et al (2007) showed no significant differences within reading achievements of students between traditional texts and electronic texts. This result was inconsistent with the results of the present study that showed the seventh grade students in the tablet digital texts group performed higher than their counterparts in the print texts in the reading achievements.

Meniado (2016) also found opposite results to the present study that showed significant correlations between the reading achievements, reading strategies and reading motivation. The results of Meniado (2016) showed no correlation between reading strategies and reading comprehension. In addition, no correlation between the reading motivation and reading comprehension was reported in this study.

To sum up, overall results showed that the seventh grade students in the tablets digital texts group performed higher than their counterparts in the print texts group in the reading achievements, reading strategies and reading motivation.

The seventh grade students in the tablet digital texts group showed high awareness of Reading Strategies, while their counterparts in the print texts group showed moderate and high awareness of them. Both groups reported the ranking of the most frequently used Reading Strategies as follows; "Problem Solving Strategies", "Global Strategies" and "Support Strategies".

Most correlations between the reading achievements, reading strategies and reading motivation in the print texts group and the tablet digital texts group were



positive. The coefficients in the tablet digital texts group were higher than the print texts group in the three correlations.

To sum up, the students who used tablet digital texts scored higher than the students using the print texts in the reading achievements, reading strategies and reading motivation

### **5.3 Conclusion**

This study aimed at exploring the impact of the purposeful use of the tablet digital texts versus the print texts on the seventh grade students' reading achievements, reading strategies and reading motivation. To achieve the purpose of the study, five research questions were addressed to identify the impact of the tablet digital texts group and the print texts group on each dependent variable including the reading achievements, reading strategies and reading motivation. Besides, the correlations were explored between the reading achievements, reading strategies and reading motivation in tablet digital texts group and the print texts group. Then, the correlations were compared between the two groups. In this context, the main results were summed up as follows.

First, the results of the research questions are supported partially and completely by the results of other research studies. However, the results are inconsistent with few studies in different contexts.

Second, the seventh grade students in the tablet digital texts group performed higher than their counterparts in the print texts group in the reading achievements.

Third, the seventh grade students in the tablet digital texts group showed high awareness of the reading strategies. The three subscales were reported as high frequently used strategies. The students in the tablet digital texts group reported

using “Problem Solving Strategies” ( $M=19$ ), “Global Reading Strategies” ( $M= 4.11$ ) and “Support Reading Strategies” ( $M=4.01$ ) respectively.

Fourth, the seventh grade students in the print texts group showed moderate to high awareness of reading strategies. The three subscales were reported as high frequently used strategies. The students in the print texts group reported using “Problem Solving Strategies” ( $M=3.76$ ), “Global Strategies” ( $M= 3.54$ ) and “Support Strategies” ( $M=3.49$ ) respectively.

Fifth, the seventh grade students in both groups reported the sequence of the frequent usage of to the three subscales of the reading strategies as “Problem Solving Strategies”, “Global Strategies”, and “Support Strategies” respectively.

Sixth, the seventh grade students in the tablet digital texts group displayed higher levels of the reading motivation compared to their counterparts in the print texts group in the five subscales of the reading motivation.

Seventh, “Extrinsic Values” were observed the highest reading motivation subscale and “Engagement Values” were the lowest in both tablet digital texts group and the print texts group. Additionally, “Intrinsic Values” were reported the second highest in the print texts group but the second lowest in the tablet digital texts group.

Eighth, the correlation between the reading achievements and “Global Strategies” in the print texts group were higher than the tablet digital texts group; it was the same with “Problem Solving Strategies” in the two groups. Also, the correlation between the reading achievements and “Support Reading Strategies” was higher in the tablet digital texts group as no correlation was reported in the print texts group. The overall correlation between the reading achievements and the entire scale of the reading strategies in the tablet digital texts group were higher than the print texts group.

Ninth, the correlations between the reading motivation and “Global Strategies” and “Problem Solving Strategies” in the tablet digital texts group were higher than the print texts group. Moreover, the correlation with “Support Strategies” in the print texts was higher than the tablet digital texts group. In addition, no correlation was reported between the reading motivation and “Global Strategies” and “Problem Solving Strategies” in the print texts group.

Tenth, the results showed significant correlations between the three variables: the reading achievements, reading strategies and reading motivation in the two groups, but the correlation coefficients in the tablet digital texts group were higher than the print texts group in all correlations in overall scores of the three variables.

#### **5.4 Implementations and Recommendations**

Based on the results of the five research questions, some suggestions for implementations and recommendations are provided for research, instruction and assessment as follows.

First, the tablet digital texts were found to have higher impact than the print texts on the reading achievements. Thus, the decision makers and schools need to shift towards Tablet integration gradually to enhance the students’ reading achievements.

Second, it is also suggested to shift towards tablet integration to enhance the students’ reading strategies and increase their reading achievements as well.

Third, “Support Reading Strategies” were reported the least frequently used. Thus, teachers need to raise the students’ awareness to the importance of the “Support Reading Strategies” (taking notes while reading, reading aloud, summarizing, discussing what to read with others, underlining information in text,

using reference materials, paraphrasing for better understanding, going back and forth in text, and asking oneself questions). Teachers should teach these strategies explicitly and incorporate them in reading instructional activities and assessment. In addition, these support strategies need to be highlighted in the reading textbooks and worksheets.

Fourth, more emphasis should be paid to the least frequently used strategies (determining what to read closely, reading aloud for better understanding, noting text characteristics, pausing and thinking about reading, using typographical aids, and adjusting reading rate) reported by the tablet digital texts group. It is recommended to teach and train students to implement these strategies while reading; moreover, these strategies should be incorporated in the curriculum and instructional practices as well as the assessment for learning and assessment of learning.

Fifth, greater emphasis should also be laid on the least frequently used strategies (Determining what to read closely, Using text features, Noting text characteristics, and Confirming predictions) reported by the print texts group. It is observed that all these least frequently used strategies are “Global Reading Strategies”. Thus, much attention should be paid to raise students’ awareness of using these strategies in particular and “Global Reading Strategies” in general as they are the second least frequently used strategies. It is suggested to explicitly teach these strategies in reading classes and to highlight them in books, worksheets and assessment.

Sixth, it was reported that the students who used tablet digital texts performed higher than those using print texts in the reading achievements and reading motivation. Thus, it is recommended to integrate tablets in teaching reading to enhance the students’ reading motivation and increase their reading achievements as

well. Additionally, the tablet integration is appropriate to the demands of the digital age that students have become digitally native and are exposed to digital texts in daily basis.

Seventh, the engagement values were reported the lowest values in the reading motivation. So, teachers are invited to enhance students' engagement through different ways and strategies like reciprocal teaching, interactive reading journals, close reading, and reader's theater. In addition, students should be provided with interesting reading topics of personal interest that have clear meaning and immediate value to them.

Eighth, it is also recommended to consolidate the extrinsic motivation of the students like giving certificates for the students who read more and raising their awareness that reading will help them in their graduate study, obtain better opportunities to get a better job, improve their research skills and understand different cultures and lifestyles of people.

Tenth, teachers and parents need to regard the intrinsic motivation of the students and their engagement values by celebrating their progress, selecting texts of personal interests, building self-confidence.

## **5.5 Limitations and Future Research Opportunities**

Although the study has tackled main themes extensively and intensively related to tablet integration, reading achievements, motivation and print texts, some limitations have been acknowledged. For example, the study only sampled 75 seventh grade students in two private schools in one emirate in the UAE and restricted to the period of one academic year 2015-2016. Future studies are suggested

to investigate this topic in a larger sample with a more variety of classes in different emirates to bring a higher external validity.

Another limitation of the study was related to the use of SORS in identifying the reading strategies as reported using by students; students might rate themselves higher in their strategy use than they were really used. Future studies are recommended to employ a mixed method approach to triangulate the results.

As the focus of this study was on reading only, it would be more significant to investigate tablet integration, reading achievements, motivation and print texts in other language skills including listening, speaking and writing.

Further research studies are suggested to explore the role of gender's impact on the use of tablets, achievements, strategies and motivation.

Future research studies are also needed to bring a holistic view of the topic by expanding the sample to include other classes and other stages of education including the elementary and high stages in private and public schools.

## References

- Ahmadi, M.R. (2013). The relationship between students' reading motivation and reading comprehension. *Journal of Education and Practice*, 4 (18), 8-17.
- Ahmadi, R. A., Ismail, H. N., & Abdullah, M. K. (2013). The importance of metacognitive reading strategy awareness in reading comprehension. *English Language Teaching*, 6 (10), 235-249.
- Akin-Little, K. A., Eckert, T. L., Lovett, B. J., & Little, S. G. (2004). Extrinsic reinforcement in the classroom: Bribery or best practice. *School Psychology Review*, 33, 344-362.
- Alexander, P. A., Graham, S., & Harris, K. (1998). A perspective on strategy research: Progress and prospects. [Special Issue] *Educational Psychology Review*, 10, 129-154.
- Alkhawaldeh, A. (2011). The contribution of reading comprehension to writing skill development in English among university students in Jordan. *European Journal of Social Sciences*, 25(2), 260-274.
- Al Noursi, O. (2013). Attitude towards learning: The case of the UAE technological high school. *Educational Research*, 4(1), 21-30.
- Aloqaili, A.S. (2005). Toward a modern standard of reading skills for elementary schools. *Journal of Reading and Literacy*, 49 (1), 77-146.
- Alsheikh, N. (2002). *An examination of the metacognitive reading strategies used by native speakers of Arabic when reading academic texts in Arabic and English*. Unpublished doctoral dissertation, Oklahoma State University-Stillwater.
- Alsheikh, N. (2011). Three readers, three languages, three texts: The Strategic reading of multilingual and multiliterate readers. *The Reading Matrix*, 11 (1), 34-53.
- Alsheikh, N. & Mokhtari, K. (2011). An examination of the metacognitive reading strategies used by native speakers of Arabic when reading academic texts in Arabic and English. *English Language Teaching*, 4 (2), 151-160.



- Al-Sobhani, Y. A. (2013). Metacognitive reading strategies use by Yemeni EFL undergraduate university students. *Frontiers of Language and Teaching*, 4, 121-130.
- Amutha, A. (2014). Tools of technology to empower reading skills, language in India. Retrieved from [www.languageinindia.com](http://www.languageinindia.com) ISSN 1930-2940 14:4 April 2014, 11<sup>th</sup> International Congress on English Grammar (ICEG 2014). In association with Systemic Functional Linguistics.
- Anderson, R.C., Wilson, P.T. (1986). What they don't know will hurt them: The role of prior knowledge in comprehension. In: Orasanu, J. (Ed.), *Reading comprehension: From Research to Practice*. Lawrence Erlbaum Associates, Pub. Hillsdale, New Jersey.
- Aydemir, Z. & Öztürk, E.(2012). The effects of reading from the screen on the reading motivation levels of elementary 5th graders. *The Turkish Online Journal of Educational Technology*, 11(3), 357-365.
- Baker, L. & Brown, A.L (1984). Metacognitive skills and reading. In P.D. Pearson, R. Barr, M. Kamil, & P. Mosemthal (Eds.), *Handbook of reading research: Vol.2*. (pp. 353-394) New York: Longman.
- Baker, L. (2002). Metacognition in comprehension instruction. In Block, C.C., & M. Pressley (Eds.). *Comprehension instruction: Research-based best practices* (pp. 77-95). New York: The Guilford Press.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26. 358.
- Barron, B., Cayton-Hodges, G., Bofferding, L., Coople, C., Darling-Hammond, L., Bayliss, L., Connell, C., & Farmer, W. (2012). Effects of ebook readers and tablet computers on reading comprehension. *International Journal of Instructional Media*, 39 (2), 131-137.
- Barros, A. & Carvalho, A. (2007). From a Web Quest to a Reading Quest: Learners' reactions in an EFL extensive reading class. *Interactive Educational Multimedia*, 15, 37-51.
- Bazeley, P. (2009). Integrating data analyses in mixed methods research [Editorial]. *Journal of Mixed Methods Research*, 3(3), 203-207.
- Beatty, K., Hyland, F., Hyland, P. & Kelly, K. (2009). Toward a Culture of Reading: Four perspectives. *Journal of Research in Education*, 19, 97-113.

- Bebell, D., Dorris, S., & Muir, M. (2012). *Emerging results from the nation's first kindergarten implementation of iPads*. Auburn: Auburn School Department.
- Becker, M., McElvany, N., & Kortenbruck, M. (2010). Intrinsic and extrinsic reading motivation as predictors of reading literacy: A longitudinal study. *Journal of Educational Psychology*, 102(4), 773.
- BeimerS, K.D.(2014). *Correlation between interactive ebooks and printed text in reading achievement and student interest*. Master Thesis. Dordt College. Retrieved from [https://www..edu/?utm\\_source=digitalcollections.dordt.edu%2Fmed\\_theses%2F48&utm\\_medium=PDF&utm\\_campaign=PDFCoverPages](https://www..edu/?utm_source=digitalcollections.dordt.edu%2Fmed_theses%2F48&utm_medium=PDF&utm_campaign=PDFCoverPages).
- Beishuizen, J., Asscher, J., Prinsen, F., & Elshout-Mohr, M. (2003). Presence and place of main ideas and examples in study texts. *British Journal of Educational Psychology*, 73(3), 291-316.
- Bennison, A. & Goos, M. (2010). Learning to teach Mathematics with technology: A survey of professional development needs, experiences and impacts. *Mathematics Education Research Journal*, 22 (1), 31-56.
- Bennett, C. (2011). Genres of research in multicultural education. *Review of Educational Research*, 71(2), 171-217.
- Benton, S. L., Duchon, D., & Pallett, W. H., (2012). Validity of student self-reported ratings of instruction. *Assessment & Evaluation in Higher Education*. Retrieved from <http://dx.doi.org/10.1080/02602938.2011.636799>.
- Bernier, N. (2013, January 10). *The Texas school district where every student gets an iPad*. KUT News. Retrieved from <http://kutnews.org/post/texas-school-district-where-every-studentgets-ipad>.
- Best, S., & Kellner, D. (2001). *The postmodern adventure*. New York, NY: Guilford Press.
- Block, E. (1992). See how they read: Comprehension monitoring of L1 and L2 readers. *TESOL Quarterly*, 26, 319-343.
- Bloemsma, M.S. (2013). *Connecting with Millennials: Student engagement, 21st century skills, and how the ipad is transforming learning in the classroom*. PhD, University Of California, Irvine California State Polytechnic University, California.

- Bofferding, L., & Levine, M. (2011). *Take a giant step: A blueprint for teaching young children in digital age*. New York: The Joan Cooney Center at Sesame Workshop.
- Bos, C.S., Anders, P.L. (1990). *Toward an interactive model: teaching text-based concepts to learning disabled students*. In: Swanson, H.L., Keogh, B. (Eds.), *Learning Disabilities: Theoretical and Research Issues*. Lawrence Erlbaum Associates, Hillsdale, New Jersey.
- Boyles, N. (2013). Closing in on. *Educational Leadership*, 36-41.
- Brewster, C., & Fager, J. (2000). *Increasing student engagement and motivation: From time-on-task to homework*. Portland, OR: Northwest Regional Educational Laboratory.
- Britt, M. A., & Gabrys, G. L. (2001). Teaching advanced literacy skills for the World Wide Web. In C.R. Wolfe (Ed.), *Learning and teaching on the world wide web*, (pp.73-90). San Diego: Academic Press.
- Broden, S. (2013, August 21). City schools seek \$5.2M for student technology. *The Daily News Journal*. Retrieved from <http://www.dnj.com/article/20130822/NEWS05/308210034/City-Schools-seeks-5-2Mstudent-technology?gcheck=1>.
- Broussard, S. C., & Garrison, M. E. B. (2004). The relationship between classroom motivation and academic achievement in elementary school-aged children. *Family and Consumer Sciences Research Journal*, 33(2), 106–120.
- Brown, H.D. (2004). *Language assessment: Principles and classroom practices*. White Plains, Longman, NY.
- Cabral-Márquez, C. (2011). *The effects of setting reading goals on reading motivation, reading achievement, and reading activity*. PhD. Northern Illinois University De Kalb, Illinois Retrieved from ProQuest Dissertation and Theses database. UMI Number: 345777.
- Cardullo, V.M. (2013). *Eighth-grade students reading nonfiction literature on the ipad: An exploratory case study*. PhD. Dissertation. The University Of Central Florida Orlando, Florida.
- Carrell, P.L. (1989). Metacognitive awareness and second language reading. *The Modern Language Journal*, 73, 121-130.

- Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: re-reading news on climate change. *Public Understanding of Science* 16, (2) 223-243.
- Casanave, C. P. (1988). Comprehension monitoring in ESL reading: A neglected essential. *TESOL Quarterly*, 22(2), 283.
- Caverly, D. C., Nicholson, S. A., & Radeliffe, R. (2004). The effectiveness of strategic reading instruction for college developmental readers. *Journal of College Reading and Learning*, 35(1), 25-49.
- Chapman, J. W., & Tunmer, W. E. (1995). Development of young children's reading self-concepts: An examination of emerging subcomponents and their relationship with reading achievement. *Journal of Educational Psychology*, 87, 154-167.
- Chen, G. Cheng, W., & Chang, T. (2014). A comparison of reading comprehension across paper, computer screens, and tablets: Does tablet familiarity matter? *J. Comput. Educ.*, 1(2-3), 213-225.
- Chen, J., & Chang, C. (2006). Using computers in early childhood classrooms: Teachers' attitudes, skills and practices. *Journal of Early Childhood Research*, 98(1), 169-188.
- Chiong, C., & Shuler, C. (2011). Learning: Is there an App for that? *Investigations of young children's usage and learning with mobile devices and apps*. New York: The Joan Ganz Cooney Center at Sesame Workshop.
- Ciampa, K. (2012). Reading in the digital age: Using electronic books as a teaching tool for beginning readers. *Canadian Journal Of Learning And Technology*, 38(2), 1-16.
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. Harlow: Longman. New Yourk.
- Coiro, J. (2003a). Reading comprehension on the Internet: Expanding our understanding of reading comprehension to encompass new literacies [Electronic version]. *Reading Teacher*, 56(5), 458-464.
- Coiro, J. (2003b). Rethinking comprehension strategies to better prepare students for critically evaluating content on the Internet. *New England Reading Association Journal*, 39, 29-34.

- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly*, 42, 214-257.
- Coiro, J. & Kennedy, C. (2011). The online reading comprehension assessment (ORCA) project: Preparing students for common core standards and 21st century literacies. White paper based on work supported by the United States Department of Education under Award No. R305G050154 and R305A090608.
- Connell, C. Bayliss, L. & Farmer, W. (2012). Effect of eBook readers and tablet computers on reading comprehension. *International Journal of Instructional Media*, 39(2), 140.
- Cooper, D.J., & Kiger, N.D. (2006). *Literacy: Helping children construct meaning*. Boston, MA: Houghton Mifflin.
- Couse, L. J., & Chen, D. W. (2010). A Tablet computer for young children? Exploring its viability for early childhood education. *Journal of Research on Technology in Education*, 43(1), 75-96.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*, (4th Ed.). Boston: Pearson.
- Cristin, C. (2012). *Professional development needs of early childhood providers: A Focus Group Study*. Mater Thesis, Honors Scholar Theses. 243. Retrieved from [http://digitalcommons.uconn.edu/srhonors\\_theses/243](http://digitalcommons.uconn.edu/srhonors_theses/243).
- Crichton, S., Pegler, K. & White, D. (2012). Personal devices in public settings: lessons learned from an iPod touch/ iPad project. *The Electronic Journal of e-Learning*, 10(1), 23-31.
- Crompton, H., Goodhand, L., & Wells, S. (2011). The whole world in their hands. *Learning and Leading with Technology*, 38(5), 16-19.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627-668.
- Deci, E. L., & Ryan, R. M. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology* 25, 54-67 . Retrieved from



[http://www.selfdeterminationtheory.org/SDT/documents/2000\\_RyanDeci\\_IntExtDefs.pdf](http://www.selfdeterminationtheory.org/SDT/documents/2000_RyanDeci_IntExtDefs.pdf).

- Dörnyei, Z. (2010). *Researching motivation: From integrativeness to the ideal L2 self*. In S. Hunston & D. Oakey (Eds.), *Introducing applied linguistics: Concepts and skills* (pp. 74-83). London: Routledge.
- Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*, Mahwah, NJ: Lawrence Erlbaum.
- Dreyer, C., & Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology-enhanced learning environment. *System*, 31, 349-365.
- Dubin, F., & Bycina, D. (1991). Academic Reading and the ESL/EFL Teacher. In M. Celce-Murcia (Ed.), *Teaching English as a Second or Foreign Language* (2nd ed., pp. 195-215). New York: Newbury House
- Duff, F. J., & Clarke, P. J. (2010). Practitioner review: Reading disorders: What are the effective interventions and how should they be implemented and evaluated? *Journal of Child Psychology and Psychiatry*, 52(1), 3-12.
- Eagleton, M. B., & Dobler, E. (2007). *Reading the web: Strategies for internet inquiry*. Guilford Press. New York.
- Eccles, J. (1983). *Expectancies, values and academic behaviors*. In J. T. Spence (Ed.), *Achievement and achievement motives*. San Francisco: Freeman.
- Eccles, J. S., & Wigfield, A. (1995). *Teacher expectancies and student motivation*. In J. B. Dusek (Ed.), *Teacher expectancies* (pp. 185-226). Hillsdale, NJ: Erlbaum.
- Ekkers, C. (2014). *The Positive effects of iPads versus traditional teaching*. Caldwell College, M.A. in Special Education Retrieved from ProQuest Dissertation and Theses database UMI 1555551.
- Elshair, H.M. (2002). *The strategies used by students to read educational websites and their relation to website usability and text design*. Doctoral dissertation. University of Pittsburg, Pittsburg.
- Erguvan, D. (2016). Students' attitudes towards extensive and intensive reading and instructors' motivational strategies. *Arab World English Journal (AWEJ)*, 7(2), 136-160.

- Ertem, I.S.(2010). The effect of electronic storybooks on struggling fourth graders' reading comprehension. *TOJET: The Turkish Online Journal of Educational Technology*, 9,(4). 140-155. Retrieved from <http://www.tojet.net/articles/v9i4/9414.pdf>.
- Fahim, M., Barjesteh, H., Vaseghi, R. (2012). Effects of critical thinking strategy training on male/female EFL learners' reading comprehension. *English Language Teaching*, 5(1), 140-145.
- Fagan, J. (2013, September 15). City council approves \$5.2M in technology upgrades. The Murfreesboro Post. Retrieved from <http://www.murfreesboropost.com/city-councilapproves-5-2m-in-technology-upgrades-cms-36890>
- Falloon, G. (2013). Young students using iPads: App design and content influences on their learning pathways. *Computers & Education*, 68, 505-521. Retrieved from <http://journals.sagepub.com/doi/abs/10.1177/0735633115571923>.
- Findell, E. (2013). *Effects of an ipad ibook on reading comprehension, electrodermal activity, and engagement for adolescents with disabilities*. PhD, Graduate Faculty of the University of Kansas, Kansas. Retrieved from ProQuest Dissertations & Theses. UMI 3606960.
- Fisher, D., Lapp, D., & Wood, K. (2011). Reading for details in online and printed text: A prerequisite for deep reading. *Middle School Journal*, 42(3), 58-63.
- Flavell, J. H. (1997). *Recent convergences between metacognitive and theory-of-mind research in children development: Constructing metacognitive knowledge*. Presented at the meeting at Biennial Meeting of the Society for Research in Child Development, Washington, DC.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The Nature of Intelligence* (pp. 231-235). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Fox, L. C. (2014). *Effects of technology on literacy skills and motivation to read and Write*. Education and Human Development Master's Thesis. Paper 522. State University of New York at Brockport. New York.
- Franklin, C. (2007). Factors that influence elementary teachers' use of computers. *Journal of Technology and Teacher Education*, 15, 267-293.



- Gardner R. (2005). *Integrative motivation and second language acquisition*. Canadian Association of Applied Linguistics/Canadian Linguistics Association. Joint Plenary Talk - May 30, 2005, London, Canada
- Garner, R. (1987). *Metacognition and reading comprehension*. Norwood, NJ: Ablex Publishing Co.
- Garner, R. (1980). Monitoring and understanding: An investigation of good and poor reader's awareness of induced miscomprehension of text. *Journal of Reading Behavior*, 12, 55-63.
- Gee, P. (1991). *Social Linguistics: Ideology in Discourses*, Falmer Press: London.
- Getz, L. (2012). *Mobile App Technology for Social Workers*. Retrieved from <http://www.socialworktoday.com/archive/051412p8.shtml>.
- Goodman, K. (1967). Reading: A psycholinguistic guess game. *Journal of the Reading Specialist*, May, 126-135.
- Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology*, 82(3), 525-538.
- Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. New York, NY: Cambridge University Press.
- Gray, M. K. (2008). *An investigation of the relationship between amount and type of reading of 5th grade students and their reading achievement*. PhD, University of Pittsburgh, Pittsburgh. Retrieved from ProQuest Dissertation and Theses database UMI Number 3322312.
- Gredler, M. E., Broussard, S. C. & Garrison, M. E. B. (2004). The Relationship between classroom motivation and academic achievement in elementary-school-aged children. *Family and Consumer Sciences Research Journal*, 33(2), 106-120.
- Grimshaw, S., Dungworth, N., McKnight, C., & Morris, A. (2007). Electronic books: Children's reading and comprehension. *British Journal of Educational Technology*, 38: 583-599. doi: 10.1111/j.1467-8535.2006.00640.
- Guay, F., Chanal, J., Ratelle, C. F., Marsh, H. W., Larose, S., & Boivin, M. (2010). Intrinsic, identified, and controlled types of motivation for school subjects in

young elementary school children. *British Journal of Educational Psychology*, 80(4), 711-735.

- Guthrie, J. T. (2004). *Differentiating instruction for struggling readers within the CORI classroom*. In J. T. Guthrie, A. Wigfield, & K. C. Perencevich (Eds.), *Motivating reading comprehension: Concept Oriented Reading Instruction* (pp. 1-24). Mahwah, NJ: Erlbaum.
- Guthrie, J. T. & Coddington, C. S. (2009). Reading motivation. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation in school* (pp. 503-525). New York: Routledge.
- Guthrie, J. T., Klauda, S. L., & Ho, A. N. (2013). Modeling the relationships among reading instruction, motivation, engagement, and achievement for adolescents. *Reading Research Quarterly*, 48, 9-26. doi:10.1002/rrq.035.
- Hagger, M. S. & Chatzisarantis, N.L.D. (2007). *Intrinsic motivation and self-determination in exercise and sport*. Human Kinetics Europe Ltd.
- Hansen, R., & Borthwick, A. (2012). Transforming the elementary education learning environment. Anytime. *Anywhere Learning Foundation Newsletter*. Retrieved from [http://www.aalf.org/index.php?msg=error\\_login](http://www.aalf.org/index.php?msg=error_login).
- Hartman, D. K., Morsink, P. M., & Zheng, J. (2010). From print to pixels: The evolution of cognitive conceptions of reading comprehension. In E. A. Baker (Ed.), *The new literacies: Multiple perspectives on research and practice* (pp. 131-164). New York, NY: Guilford Press.
- Henderson, S., & Yeow, J. (2012). *iPad in education: A case study of iPad adoption and use in a primary school*. *Proceedings from HICSS 2012: 45th Hawaii International Conference on System Sciences*. Maui, Hawaii.
- Hiebert, E. H. (2011). Beyond single readability measures: Using multiple source of information in establishing text complexity. *Journal of Education*, 191(2), 33-42.
- Horney, M. A., & Anderson-Inman, L. (1994). The electro text project: Hypertext reading patterns of middle school students. *Journal of Educational Multimedia & Hypermedia* 71(3), 91.

- Hosenfeld, C. (1977). A preliminary investigation of the reading strategies of successful and no successful second language learners. *System*, 5, 110-123.
- Hu, W. (2011, January 4). Math that moves: Schools embrace the iPad. *The New York Times*. Retrieved from information in establishing text complexity. *Journal of Education*, 191(2), 33-42.
- Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher*, 66(1), 15-23.
- Hyland, K. (2003). *Second language writing*. New York: Cambridge University Press.
- IELTS. (2010). Mean band score for the most frequent countries or regions of origin (Academic). IELTS Annual Review 2010. Retrieved from [https://www.ielts.org/pdf/IELTS\\_Annual\\_review\\_2010.pdf](https://www.ielts.org/pdf/IELTS_Annual_review_2010.pdf)
- Ismail, S., Al-Awidi, H. & Almekhlafi, A. (2012). Employing reading and writing computer-based instruction in English as a second language in elementary schools. *International Journal of Business and Social Science* 3 (12) 265-272.
- Ismail, S., Almekhlafi, A. & Almekhlafy, M.H. (2010). Teachers' perceptions of the use of technology in teaching languages in United Arab Emirates' schools. *International Journal for Research in Education* (27)37-54.
- Jamshidi, P., & Moghaddam, M. Y. (2013). The effect of Iranian EFL learners' awareness of reading comprehension strategies on their motivation to read. *International Journal of English Language Education*, 1(1), 162-178. Retrieved from <http://dx.doi.org/10.5296/ijele.v1i1.2995>.
- Jamshidi, P. (2013). The effect of Iranian EFL learners' awareness of reading comprehension strategies on their motivation to read. *International Journal of English Language Education*. 1 (1), 162-178.
- Jimenez, R., Garcia, G., & Pearson, P. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly*, 31 (1), 90-112.
- Jimenez, R., Garcia, G., & Pearson, P. (1995). Three children, two languages, and strategic reading: Case studies in bilingual/monolingual reading. *American Educational Research Journal*, 32 (1), 67-97.

- Johnson, K. E. (2006). The sociocultural turn and its challenges for second language teacher education. *TESOL Quarterly*, 40(1), 235-257. Retrieved from <http://dx.doi.org/10.2307/40264518>.
- Jones J., Staats W., Bowling N., Bickel R., Cunningham M. & Cadle C. (2005). An evaluation of the Merit reading and software program in the Calhoun County (WV) middle/high school. *Journal of Research on Technology in Education*, 37, 177-195.
- Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), Handbook of reading research (Vol. III, pp. 403-422). Mahwah, NJ: Laurence Erlbaum Associates.
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). Improving adolescent literacy: Effective classroom and intervention practices: A practice guide (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from [http://ies.ed.gov/ncee/wwc/pdf/practiceguides/adlit\\_pg\\_082608.pdf](http://ies.ed.gov/ncee/wwc/pdf/practiceguides/adlit_pg_082608.pdf)
- Kang, Y., Wang, M. J., & Lin, R. (2009). Usability evaluation of e-books. *Displays*, 30(2), 49-52.
- Karbalaei, A. (2010). A comparison of the metacognitive reading strategies used by EFL and ESL readers. *The Reading Matrix*, 10(2), 165-180.
- Kim, J. (2008). *Roles of native and non-native teachers in test-preparation courses in Korea: teachers' and students' perceptions*. Master thesis, McGill University, Montreal, Canada. Retrieved from ProQuest Dissertation and Theses database. (ISBN No. 978-0-494-53446-5).
- Kintsch, W. (2005). The construction-integration model of text comprehension and its implications for instruction. In R.B. Ruddell & N.J. Unrau (Eds.), *Theoretical models and processes of reading*, 5th ed. (pp. 1270-1328). Newark, DE: International Reading Association.
- Kintsch, W. (1988). The use of knowledge in discourse processing: A construction-integration model. *Psychological Review*, 95, 163-182.
- Klassen, R. M. (2010). The confidence to manage learning: The self-efficacy for self-regulated learning of early adolescents with learning disabilities. *Learning Disabilities Quarterly*, 33, 19-30.

- Krashen, S. (1993). *The power of reading*. Libraries Unlimited, Inc., Englewood, California.
- Krashen, S. (2003). Dealing with English fever. *Selected Papers from the Twelfth International Symposium on English Teaching and Learning*. ETA-ROC, 395-404. Taipei: Crane Publishing Company.
- Kress, G. (2003). *Literacy in the new media age*. Psychology Press. London: Routledge.
- Kymes, A.D. (2007). *Investigation and analysis of online reading strategies*, PhD. The Oklahoma State University. Retrieved from <http://digital.library.okstate.edu/etd/umi-okstate-2231.pdf>.
- Larson, L. (2010). Digital readers: The next chapter in e-book reading and response. *The Reading Teacher*, 64 (1), 15-22.
- Levine M. (2010). The Digital Promise: Transforming Learning with Innovative Uses of Technology. A white paper on literacy and learning in a new media age, Joan Ganz Cooney Center at Sesame Workshop. Retrieved from [http://dmlcentral.net/sites/dmlcentral/files/resource\\_files/Apple.pdf](http://dmlcentral.net/sites/dmlcentral/files/resource_files/Apple.pdf).
- Leu, D.J., Jr. (2000). Literacy and technology: Deictic consequences for literacy education in an information age. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research*, 3, 743–770. Mahwah, NJ: Erlbaum.
- Leu, D. J., Jr. (2001). Internet project: Preparing students for new literacies in a global village. *The Reading Teacher*, 54, 568-585.
- Leu, D. J., Jr. (2002). The new literacies: Research on reading instruction with the Internet and other digital technologies. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed.), (pp. 310-337). Newark, DE: International Reading Association.
- Leu, D. J., Jr., & Reinking, D. (1996). Bringing insights from reading research to research on electronic learning environments. In H. van Oostendorp & S. Mul (Eds.), *Cognitive aspects of electronic text processing*, (pp.43-75). Norwood, NJ: Ablex Publishing.



- Leu, D.J., Jr., Kinzer, C.K., Coiro, J., & Cammack, D. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R.B. Ruddell & N.J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1570–1613). Newark, DE: International Reading Association. doi:10.1598/0872075028.54
- Leu, D. J., McVerry, J. G., O'Bryne, W. I., Zawilinski, L., Castek, J., & Hartman, D. K. (2009). The new literacies of online reading comprehension and the irony of no child left behind: Students who require our assistance the most, actually receive it the least. In L. M. Morrow, R. Rueda, & Di. Lapp (Eds). *Handbook of research on literacy instruction*. New York: Guilford.
- Linda C. Swanson, L.C. (2012). *Impact of ipads on reading fluency in literacies*. Retrieved from <http://tinyurl.com/cuwafsr>.
- Macaro, E.(2005).*Teaching and learning a Second Language: A guide to recent research and its applications*. London, Continuum.
- Maqbool, A. (2015). Adapting a reading and learning culture. Voice of Journalists. Retrieved from <http://www.voiceofjournalists.com/adapting-reading-and-learning-culture/>.
- Maghsudi, M., & Talebi, S. H. (2009). The impact of lingualluity on the cognitive and metacognitive reading strategies awareness and reading comprehension ability. *Journal of Social Sciences*, 18(2), 119-126.
- Mangen, A. (2008). 'Hypertext fiction reading: Haptics and immersion', *Journal of Research in Reading*, 31(4), 404–419.
- Mangen, A., Walgermo, B. R., & Brønnick, K. (2013). Reading linear texts on paper versus computer screen: Effects on reading comprehension. *International Journal of Educational Research*, 58,61–68.
- Mardis, M., & Everhart, N. (2011). Digital textbooks in Florida: Extending the teacher-librarians' reach. *Teacher Librarian*, 38(3), 8-11.
- Marinak, B.A. & Gambrell, L.B. (2007). Choosing and using informational text for instruction in the primary grades. In B.J. Guzzetti (Eds.) *Literacy for a New Millennium: Early literacy*. (pp. 141-154). Westport, CT: Praeger.
- Marmarelli, T., & Ringle, M. (2011). *The Reed College iPad Study. Summary of faculty evaluation reports* Retrieved from the Reed Institute: Master of

Science in Special Education UMI Number: 1523827. Master of Science in Special Education. UMI Number: 1523827.

- Martyniuk, W. (2006). *Common European framework of reference for languages: Learning, teaching, assessment: A Synopsis*. Retrieved from <http://lrc.cornell.edu/events/past/2005-2006/martyniuk.doc>.
- McClanahan, B., Williams, K., Kennedy, E., & Tate, S. (2012). How use of an iPad facilitated reading improvements. *Tech Trends*, 56(3), 20-28.
- McCullagh, Penny. (2005) Sport and exercise psychology lecture. CAL state needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268
- McEneaney, J. E. (2002). *A transactional theory of hypertext structure*. Paper presented at the National Reading Conference, Miami, FL. Retrieved from: <http://www.oakland.edu/~mceneane/>
- McNamara, D.S. & Shapiro, A. M. (2005). Multimedia and hypermedia solutions for promoting metacognitive engagement, coherence, and learning. *Journal of Educational Computing Research*, 33(1), 1-29.
- McNeil, J.D. (1992). *Reading comprehension: New directions for classroom practice*, third ed. Harper Collins Publishers.
- Memiş, A. & Bozkurt, M. (2013). The relationship of reading comprehension success with metacognitive awareness, motivation, and reading. *Educational Research and Reviews*, 8(15), 242-246.
- Meniado, J.C. (2016). Metacognitive reading strategies, motivation, and reading comprehension performance of Saudi EFL students. *English Language Teaching*; 9, (3)117-129.
- Mitzner, T. L., Boron, J. B., Fausset, C. B., Adams, A. E., Charness, N., Czaja, S. J. & Sharit, J. (2010). Older adults talk technology: Technology usage and attitudes. *Computers in human behavior*, 26(6), 1710-1721.
- Mokhtari, K., & Reichard, C. A. (2002). *Assessing students' metacognitive awareness of reading strategies*. *Journal of Educational Psychology*, 94 (2), 249-259.
- Mokhtari, K., & Sheorey, R. (2001). Differences in the global awareness of reading strategies among native and non-native readers. *System*, 29, 431-449.



- Morineau, T., Blanche, C., Tobin, L., Guéguen, N. (2004) *The emergence of the contextual role of the e-book in cognitive processes through an ecological and functional analysis*, University of Southern Brittany, France.
- Morse, J. M., & Niehaus, L. (2009). *Mixed methods design: Principles and procedures*. Walnut Creek, CA: Left Coast Press.
- Murray, O. & Olcese, N. (2011). Teaching and learning with iPads, ready or not? *TechTrends: Linking Research and Practice to Improve Learning*, 55 (6), 42-48.
- Mustafa, G. S. H. (2002). *English Language teaching and learning at government schools in the United Arab Emirates*. Unpublished doctoral dissertation, University of Exeter, Exeter.
- National Center for Educational Statistics [NCES]. (2010). In U.S. Department of Education (Ed.), *The nation's report card: Reading 2009*. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010458>
- Nunan, D. (1991). *Language teaching methodology*. London: Prentice Hall International. Routledge.
- O'Connell, T., Freed, G., & Rothberg, M. (2010). Using Apple technology to support learning for students with sensory and learning disabilities. *The Carl and Ruth Shapiro Family National Center for Accessible Media*, 1-25.
- OECD (2011), *PISA 2009 Results: Students On Line: Digital Technologies and Performance (Volume VI)*, PISA, OECD Publishing.
- Ojalvo, H. (November 21 2010). *How is technology affecting teaching and learning?* *The New York Times*, Retrieved from [http://learning.blogs.nytimes.com/2010/11/21/how-is-technology-affecting-teaching-and-learning/?\\_r=0](http://learning.blogs.nytimes.com/2010/11/21/how-is-technology-affecting-teaching-and-learning/?_r=0).
- Orbea, J., Villabeitia, E. (2010). The teaching of reading comprehension and meta-comprehension strategies. A program implemented by teaching staff. *Anales de Psicología*, 26 (1), 112-122.
- Ormrod, J.E. (2008). *Educational Psychology: Developing Learners* - Sixth Edition. New Jersey: Pearson Education.

- O'Sullivan, A. (2009). Reading in the Gulf: Is it time for a re-focus? *Cultivating Real Readers* 2, 43-51. Retrieved from <http://marifa.hct.ac.ae/files/2009/04/Reading-in-the-Gulf-Is-it-Time-for-a-Re-Focus.pdf>
- Passey, D & Rogers, C. with Machell, J & McHugh, G. (2004). The motivational effect of ICT on pupils. Department of Educational Research. Research Report RR523. Lancaster University. Retrieved from <http://www.dcsf.gov.uk/research/data/uploadfiles/RR523new.pdf>
- Patronis, M. (2014). The Effect of using the iPad on students' performance in writing and reading comprehension: Pilot Study Report, *Arab World English Journal*, Special Issue on CALL No.1 July, 2014(1) 67- 80.
- Pearman, C.J. (2008). Independent Reading of CD-ROM Storybooks: Measuring Comprehension with Oral Retellings. *The Reading Teacher*, 61, 594.
- Pennington, R. (July 22, 2014). UAE Ministry of Education opens more high-tech classrooms. The National. Retrieved from <http://www.thenational.ae/uae/education/uae-ministry-of-education-opens-more-high-tech-classrooms>.
- Peterson, E.S.(2015). Investigating the relationship between elementary students' motivation to read and academic achievement in reading. PhD, University of North Dakota. North Dakota, USA. Retrieved from ProQuest Dissertation and Theses database: UMI Number 3724852.
- Picton, I. (2014). *The Impact of ebooks on the reading motivation and reading skills of children and young people: A rapid literature review*, London: National Literacy Trust.
- Pintrich, P. R., & Schu Pierce, W. (2003). *Metacognition: Study strategies, monitoring, and motivation*. A workshop paper presented at Prince George's Community College. Retrieved from <http://academic.pg.cc.md.us/~wpeirce/MCCCTR/metacognition.htm#V.nk>.
- V.nk, D. H. (2002). *Motivation in education: Theory, research, and applications* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Pisa. (2009). *Assessment Framework: Key Competencies in Reading, Mathematics and Science*. Paris: OECD Publishing. *Psychological Bulletin*, 138, 775–808. doi: 10.1037/a0027600
- Plowman, L., & Stephen, C. (2005). Children, play, and computers in pre-school education. *British Journal of Educational Technology*, 36(2), 145-157.

- Pollitt, D.T.(2013). *Effects of an ipad book on reading comprehension, electrodermal activity, and engagement for adolescents with disabilities project: Preparing students for common core standards and 21st century*. PhD, University of Kansas. Kansas, USA.
- Pookcharoen, S. (2009). *Metacognitive online reading strategies among Thai EFL university students*. PhD, Indiana University. Indiana, USA. UMI Number: 3390322.
- Pressly, M. & Afflerbach, P. (1995). *Verbal reports of reading: The nature of constructively responsive reading*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Puerling, B. (2012). *Teaching in the digital age: Smart tools for age 3 to grade 3*. St.Paul, MN: Red leaf Press.
- Randi, J., Newman, T., & Grigorenko, E.L. (2010). Teaching children with autism to read for meaning: Challenges and possibilities. *Journal of Autism and Developmental Disorders*, 40, 890-902.
- Reinking, D. (2011). *Beyond the laboratory and lens: New metaphors for literacy research*. In P. L. Dunston, L. B. Gambrell, S. K. Fullerton, P. M. Stecker, V. R. Gillis, & C. C. Bates (Eds.), 60th Yearbook of the Literacy Research Association (pp. 1-17). Oak Creek, WI: Literacy Research Association.
- Robb, T. (2013). Effective extensive reading outside the classroom: A large-scale experiment. *Reading in a Foreign Language*, 27,(1).234–247.
- Roblyer, M. D., & Doering, A. H. (2013). *Integrating educational technology into teaching* (6<sup>th</sup> ed.). Boston, MA: Pearson. ISBN-13: 9780132612258 .  
Retrieved from  
<https://edutechteachers.files.wordpress.com/2015/08/integration-technology-in-education.pdf>.
- Rosenblatt, L. R. (1995). *Literature as exploration* (5th ed.). New York: Appleton-Century-Crofts Modern Language Association (Original work published 1938).
- Rosenblatt, L. M. (1985). Viewpoints: Transaction versus interaction: A terminological rescue operation. *Research in the Teaching of English*, 96-107.

- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54- 67. doi:10.1006/ceps.199.1020.
- Ryan, R. M., & Deci, E. L. (2004). Overview of self-determination theory: An organismic dialectical perspective. In E. Deci & R. Ryan (Eds.), *Handbook of self-determination research* (pp. 4-33). Rochester, NY: The University of Rochester Press.
- Samuels, S.J., & Farstrup, A. E. (2011). *What research has to say about reading instruction*. (4<sup>th</sup> Ed.). Newark, DE: International Reading Association.
- Scholastic .(2012). *Kids and family reading report*, USA: Scholastic.
- Seymour, S., & Walsh, L. (2006). *Essentials of teaching academic reading*. Boston: Houghton Mifflin Harcourt.
- Smaldino, S., Lowther, D., & Russell, J. (2012). *Instructional Technology and Media for Learning*. Upper Saddle River, NJ: Pearson.
- Smith, G. E., & Throne, S. (2007). *Differentiating instruction with technology in K-5 classrooms*. Eugene, Or: International Society for Technology in Education.
- Smith, J. K., Smith, L. F., Gilmore, A., & Jameson, M. (2012). Students' perceptions of reading ability, enjoyment of reading and reading achievement. *Learning and Individual Differences*, 22, 202-206. doi:10.1016/j.lindif.2011.04.010.
- Snow, C. (2002). Reading for understanding: Toward an R & D program in reading comprehension. Santa Monica, CA: RAND Corporation.
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press. *The Learning Network*. Retrieved from <http://learning.blogs.nytimes.com/2010/11/21/how-is-technology-affectingteaching-and-leaming/>
- Sprenger, M. (2009). Focusing the Digital Brain. *Teaching for the 21st Century*, 7(1), 34-39.
- Stahl, K. D. (2008). The effects of three instructional methods on the reading comprehension and content acquisition of novice readers. *J. of Literacy Res. Journal of Literacy Research HJLR*, 40 (3), 359-393.

- Strangman, N., & Dalton, B. (2005). Technology for struggling readers: A review of the research. In D. Edyburn, K. Higgins, & R. Boone (Eds.), *The handbook of special education technology: research and practice* (pp. 545-569). Whitefish Bay, WI: Knowledge by Design.
- Street, B. (1984). *Literacy in Theory and Practice*. Cambridge: CUP.
- Street, B. (1988). "Literacy practices and literacy myths." In R. Saljo (Ed.) *The Written Word: Studies in Literate Thought and Action*, Springer-Verlag Press, 59-72.
- Street, B. (2001). *Literacy and development: Ethnographic perspectives*. Routledge: London.
- What Works Clearinghouse. Retrieved from <http://www.eschoolnews.com/news/ssunreg.cfm?ArticleID=4110&ul=%2Fnews%2FshowStory%2Ecfm%3FArticleID%3D4110>.
- Street, B. V. (1995). *Social literacies: Critical approaches to literacy in development, ethnography and education*. London: Longman.
- Swanson, L.C. (2012). *Fluency and ipads impact of iPads on reading fluency in a sixth-grade reading classroom*. Master's thesis, Southwest Minnesota State University, Minnesota, USA. Retrieved from ProQuest Dissertation and Theses database UMI 1523827.
- Tavakoli, P. (2014). The effectiveness of metacognitive strategy awareness in reading comprehension: The case of Iranian university EFL students. *The Reading Matrix*, 14(2), 314-336.
- Thoermer, A. & Williams, L. (2012). Using digital texts to promote fluent reading. *The Reading Teacher*, 65(7), 441-445.
- Togia, A. Korobili, S. & Malliari, A. (2012). Motivation to learn and learning strategies. *Library Review*, 61(1), 41-56.
- 1st century: A balanced approach* (4th ed.). New Jersey: Allyn & Bacon.
- Tompkins, G. E. (2013). *Language arts: Patterns of practice*. (8th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Thorne, S.L., & Black, R.W. (2008). Language and literacy development in computer-mediated contexts and communities. *Annual Review of Applied Linguistics*, 55(6), 42-48.



- Torres, J. W. (2004). *Speaking up! Adult ESL students' perception of native and nonnative English speaking teachers*. Master thesis, University of North Texas. Retrieved from ProQuest Dissertation and Theses database UMI No. 1424460
- Traynor, P. L. (2003). Effects of computer-assisted instruction on different learners. *Journal of Instructional Psychology*, 30(2), 137-143.
- Turner, K. C. (2011). "Rap universal": Using multimodal media production to develop ICT literacies. *Journal Of Adolescent & Adult Literacy*, 54(8), 613-623
- Unrau, N., & Schlackman, J. (2006). Motivation and its relationship with reading achievement in an urban middle school. *Journal of Educational Research*, 100, 81-101.
- Ushida, E. (2005). The role of students' attitudes and motivation in second language learning in online language courses. *CALICO Journal*, 23 (1), p. 49-78.
- Virginia Department of Education (2011). *Learning without boundaries: Beyond textbooks: Year one report*. Retrieved from [http://www.doe.virginia.gov/support/technology/technology\\_initiatives/learning\\_without\\_boundaries/beyond\\_textbooks/index.shtml](http://www.doe.virginia.gov/support/technology/technology_initiatives/learning_without_boundaries/beyond_textbooks/index.shtml).
- Virginia Department of Education. (2012). *Beyond textbooks: Digital textbooks in an online course: Evaluation Report 2012*. Retrieved from <http://singleparents.about.com/sitesearch.htm?q=Beyond+textbooks%3A+Digital+textbooks+in+an+online+course%3A+Evaluation+report+2012.+&boost=3&SUName=singleparents&useSolr=false>.
- Vu, P. (2013). An Inquiry into How iPads are Used in Classrooms. *Department of Curriculum and Instruction: College of Education and Human Services from Southern Illinois University*, 1(17), 1-15.
- Vygotsky, L.S. (1934/2000). *Thought and Language*. Cambridge, Massachusetts: The M.I.T. Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wästlund, E., Reinikka, H., Norlander, T., & Archer, T. (2004). Effects of VDT and paper presentation on consumption and production of information: Psychological and physiological factors, Sweden: University of Karlstad.

- Waters, J. K. (2010). Enter the iPad (or Not?). *THE Journal*, 37 (6), 38-40, 42, 44-45. Retrieved from <http://eric.ed.gov/?id=EJ894833>.
- Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, 138(4), 775-808.
- Wegmann, S. (2010). Disciplinary literacy: Another name for teaching texts. Keynote speaker, Council for Online Literacy Education. Inaugural Conference, November 18, 2010.
- Wells, C.L. (2012) . *Do students using electronic books display different reading comprehension and motivation levels than students using traditional print books?* PhD Dissertation, Liberty University. USA.
- Wellings J. Van Compernelle, R. A., & Williams, L. (2011). Metalinguistic explanations and self- reports as triangulation data for interpreting second language sociolinguistic performance. *International journal of applied linguistics*, 21(1), 26-50
- Wigfield, A., & Guthrie, J. T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology*, 89, 420-432.
- Wood, K.D., & Blanton, W.E. (2009). *Literacy instruction for adolescents: Research based practice*. New York, NY: Guilford Press.
- Woody, W. D., Daniel, D. B., & Baker, C. A. (2010). E-books or textbooks: Students prefer textbooks. *Computers & Education*, 55(3), 945-948.
- Wright, V. H. & Wilson, E.K.(2011). Teachers' use of technology: lessons learned from the Teacher education program to the classroom. *SRATE Journal*, 20(2), 48-60.
- Yang, L., & Wilson, K. (2006). Second language classroom reading: A social constructivist approach. *The Reading Matrix*, 6(3), 364-372.
- Yu-hui, L., Li-rong, Z., Yue, N. (2010). Application of schema theory in teaching college English reading. *Canadian Social Science*, 6 (1), 59-65.
- Zhang, L. J. (2001). Awareness in reading: EFL students' metacognitive knowledge of reading strategies in an acquisition-poor environment. *Language Awareness*, 19(4), 268-288.



- Zhang, S. & Duke, N. K. (2008). Strategies for Internet reading with different reading purposes: A descriptive study of twelve good Internet readers. *Journal of Literacy Research*, 40(1), 128-136.
- Zouves, N (2012 September 20). iPads in local math class yields staggering results: Almost half of students jump two levels. *ABC 10 News*. Retrieved from <http://www.10news.com/news/local-news/ipads-in-local-math-class-yields-staggeringresults>.
- Zsofia, K. Takacs, Elise, K. Swart & Adriana, G. (2015). Benefits and pitfalls of multimedia and interactive features in technology-enhanced storybooks. *Review of Educational Research* 85(4), 698 – 739.

### List of Publications

Abuhattab . S. & Elkhayat, A. (2014). "Computer Mediated Communication (CMC) as a Social Sphere for Three Iraqi Ex-pats' EFL Writing in the UAE". *International Journal of Arts and Science*, 7 (3), P 391–394. <http://www.universitypublications.net/proceedings/0703/html/V4Z496.xml>

## Appendices

### Appendix A

#### Reading Achievement Test

##### Passage 1: A Man, His Son, and His Donkey

A man and his son were leading their donkey to market. A girl said “ Why Walk when you can ride ?” So the man had his son ride the donkey. Then they heard an old man say ,” look how the young ride while old people walk!” So the man had his son get down and rode himself. Soon they met some woman who cried , “ look at the tired son and lazy father!” so the man had his son get on, and they rode into town together. There a young man yelled. “Two men on one donkey! Maybe you should carry the donkey !” So they carried the donkey until they came to a bridge. There were noisy children yelling. The donkey got scared and jumped in the river. Without the donkey, the man went home crying.” Try to please everybody and you will please nobody not even yourself.

**Directions: Read the passage carefully and circle the letter for the correct answer**

1. What did the man do when the girl said? “Why walk when you can ride”?

- A. he rode the donkey.
- B. He carried the donkey.
- C. He walked with the donkey.
- D. He had his son ride the donkey

2. Why did the man keep changing how he traveled with the donkey?

- A. He got tired of walking the whole way.
- B. The donkey wasn't happy.

- C. people on the way kept telling him what to do.
  - D. His son was complaining about the ride the entire time
3. Why did the man end up with nothing at the end?
- A. He took too much differing advice.
  - B. He sold his donkey at the market.
  - C. The children took the donkey from home.
  - D. He let the donkey go to keep people quiet.
4. Why does the man say that if you try to please everyone you will please no one?
- A. You shouldn't take advice from people you don't know.
  - B. Most people offer foolish advice, so it's waste of time to listen.
  - C. Everyone has different opinions so you can never make everyone happy.
  - D. You shouldn't try to make anyone happy because only your opinion matters.

### **Passage 2 : Aesop's Fables**

Aesop's fables are stories said to be written by a Greek slave named Aesop. He died about 565 B.C.E. Each ends with a saying that sums up the fable's moral and advice. Most characters in Aesop's fables are animals that talk and act like humans. They show the good and bad of human nature in a simple , funny way.

Aesop's fables have given us popular sayings. For example , an enemy who pretends to be a friend is “ a wolf in sheep's clothing.” This comes from the fable where a wolf wears a sheepskin costume. “ Slow and steady wins the race” is the moral of “ The Tortoise and the Hare.” It teaches that determination can be more important than speed.

No one knows how many of stories Aesop actually wrote. Some of the fables came from more ancient sources. Aesop may have only retold them and made them popular.

**Directions:** Read the passage carefully and circle the letter for the correct answer

**Passage 2: "Aesop's Fables"**

5. Fables are \_\_\_\_\_
- A. Stories about tortoises and hares
  - B. Stories that were all written.
  - C. Stories that end with a moral and advice
  - D. Stories about wolves wearing sheep's clothing.
6. Most characters in Aesop's fables \_\_\_\_\_
- A. Won by determination instead of speed
  - B. Were enemies who pretended to be Friends?
  - C. Were Greek slaves in ancient times.
  - D. Were animals that talked and acted like Humans.
7. What does the saying "slow and steady wins the race" mean?
- A. It's important to train for a race.
  - B. Never race with a wild animal.
  - C. Winning is the only thing that really matters.
  - D. Determination can be more important than speed.
8. According to this passage, which saying came from one of Aesop's fables?
- A. "A wolf in sheep's clothing" came from one of Aesop's fables.
  - B. "A penny saved is a penny earned" came from one of Aesop's fables.
  - C. "Early to bed and early to rise" came from one of Aesop's fables.
  - D. "Never judge a book by its cover" came from one of Aesop's fables.

**Passage 3: Hawaii volcanoes national park**

**Dear Abby,**

My family just spent the past two weeks on a tour of the islands of Hawaii. We saw so many beautiful and amazing things. The best part, though, was Hawaii volcanoes national park on the island of Hawaii.

We saw two volcanoes, Mauna loa and Kilauea. Mauna loa is 13,677 feet above sea level. It is the world's largest volcano! Often it is called the "great builder" because it enlarges the mountain when it pours out rock. Kilauea's crater looks like a saucer hollowed out in a wide plain. It has been erupting since 1983. We got to see it from the base of the mountain.

It is amazing how something that seems so destructive is actually so important. The islands of Hawaii are a chain of volcanoes built mostly of lava. Without all those eruptions, we never would have had such a wonderful vacation!

Maybe one day you can go to Hawaii and see the volcanoes at work. I would love to go with you and show you everything that I saw!

Your friend, Josephine.

**Directions** Read the passage carefully and circle the letter for the correct answer

9. What is often called the "Great Builder"?

- A. Hawaii
- B. Kilauea
- C. Mauna Lao
- D. Lava

10. The world's largest volcano is \_\_\_\_\_

- A. Kilauea
- B. Hawaii
- C. Crater Lake
- D. Mauna Lao

11. According to Josephine, Kilauea's crater looks like \_\_\_\_\_

- A. a saucer hollowed out in a wide plain
- B. a tall mountain pouring out lava
- C. a wide mountain base
- D. a chain of steep volcanoes

12. What does Josephine think about volcanoes?

- A. she thinks they are hollow
- B. She thinks they are important.
- C. she thinks they are boring.
- D. she thinks they are tall.

#### **Passage 4: Seamount volcanoes**

Seamount is a volcano that forms on the ocean floor. There may be as many as 1 million volcanoes on the Pacific Ocean floor alone. That's about 750 times the number on dry land!

Wherever magma, or melted rock inside the earth, rises to the sea floor and erupts, seamounts arise. These submerged volcanoes form where lava, or magma that has erupted, hardens and forms new sea floor material.

Seamounts are cone-shaped, with circular or almost-circular bases. They may form with a flat top or sharp peak with a crater on top. A crater forms if the lava



under the top drains away and leaves a part of the top that collapses and makes a crater.

Seamount that grows tall enough to break the ocean surface is called an oceanic island or volcanic island. The Hawaiian Islands are oceanic islands—and another Hawaiian island is in the making. Loihi seamount is erupting and getting taller. Its summit is about 3,300 feet below the ocean's surface and may break the surface in about 50,000 years.

**Directions: Read the passage carefully and circle the letter for the correct answer**

13. Seamount volcanoes are \_\_\_\_\_

- A. volcanoes that form only in the Pacific Ocean.
- B. volcanoes that form inside the earth's crust.
- C. volcanoes that form above the ocean's surface.
- D. volcanoes that form on the ocean floor

14. Lava is \_\_\_\_\_.

- A. melted rock inside the earth.
- B. magma that has erupted
- C. A volcano under the ocean
- D. hardened sea floor material.

15. Why is Loihi Seamount getting taller?

- A. it erupts and the lava hardens on top.
- B. Sea floor material keeps lands on top of it.
- C. People pile material on it to make it larger.
- D. the Hawaiian Islands are piling on top of each other.

16. Do all seamounts break the ocean surface?

- A. Yes, they all grow tall enough.
- B. No, not all seamounts grow tall enough.
- C. Yes, they all start above the ocean surface.
- D. No, none of them grow tall enough.

## Appendix B

### Survey of Reading Strategies (SORS)

Dear Students,

The purpose of this survey is to collect information about the various techniques you use when you read academic materials in English (e.g., reading textbooks for homework or examinations etc.).

All the items below refer to your reading of academic materials. Each statement is followed by five numbers, 1, 2, 3, 4, and 5, and each number means the following:

‘1’ means ‘I never or almost never do this’

‘2’ means ‘I do this only occasionally’

‘3’ means ‘I sometimes do this’

‘4’ means ‘I usually do this’

‘5’ means ‘I always or almost always do this’

After reading each statement, circle the number (1, 2, 3, 4, or 5) which applies to you.

Note that there is no right or wrong responses to any of the items on this survey.

Participating in this survey is voluntarily and your data will be used for research purposes ONLY.

Statement	Always	Usually	Sometimes	occasionally	Never
1. I have a purpose in mind when I read.	5	4	3	2	1
2. I think about what I know to help me understand what I read.	5	4	3	2	1
3. I preview the text to see what it's about before reading it.	5	4	3	2	1
4. I think about whether the content of the text fits my reading purpose.	5	4	3	2	1
5. I skim the text first by noting characteristics like length and organization.	5	4	3	2	1
6. I decide what to read closely and what to ignore.	5	4	3	2	1
7. I use tables, figures, and pictures in the text to increase my understanding.	5	4	3	2	1
8. I use context clues to help me better understand what I'm reading.	5	4	3	2	1
9. I use typographical aids like boldface and italics to identify key information	5	4	3	2	1
10. I critically analyze and evaluate the information presented in the text.	5	4	3	2	1
11. I check my understanding when I come across conflicting information.	5	4	3	2	1
12. I try to guess what the material is about when I read.	5	4	3	2	1
13. I check to see if my guesses about the text are right or wrong.	5	4	3	2	1

Statement	Always	Usually	Sometimes	occasionally	Never
14. I read slowly but carefully to be sure I understand what I am reading,	5	4	3	2	1
15. I try to get back on track when I lose concentration.	5	4	3	2	1
16. I adjust my reading speed according to what I'm reading.	5	4	3	2	1
17. When the text becomes difficult, I pay closer attention to what I'm reading.	5	4	3	2	1
18. I stop from time to time and think about what I'm reading.	5	4	3	2	1
19. I try to picture or visualize information to help me remember what I read.	5	4	3	2	1
20. When the text becomes difficult, I re-read to increase my understanding.	5	4	3	2	1
21. I try to guess the meaning of unknown words or phrases	5	4	3	2	1
22. I take notes while reading to help me understand what I read.	5	4	3	2	1
23. When the text becomes difficult, I read aloud to help me understand what I read	5	4	3	2	1
24. I summarize what I read to reflect on important information.	5	4	3	2	1
25. I discuss what I read with others to check my understanding.	5	4	3	2	1

26.I underline or circle information in the text to help me remember it.	5	4	3	2	1
27.I use reference materials such as dictionaries to help me understand what I read.	5	4	3	2	1
28.I paraphrase (restate ideas in my own words) to better understand what I read.	5	4	3	2	1
29.I go back and forth in the text to find relationships among the ideas in it.	5	4	3	2	1
30.I ask myself questions I like to have answered in the text.	5	4	3	2	1

## Appendix C

## Survey of Reading Strategies (Arabic)

## استبانة استراتيجيات القراءة

عزيزي الطالب

تهدف هذه الاستبانة إلى جمع المعلومات عن الاستراتيجيات التي تستخدمها حين قراءة النصوص الدراسية باللغة الإنجليزية من مثل (النصوص المقررة للواجبات المنزلية والامتحانات الخ).

كل الفقرات الواردة في النص أدناه تعود إلى قراءتك باللغة الإنجليزية للمواد الدراسية . وكل فقرة

يتبعها خمسة أرقام متدرجة ( 1 ، 2 ، 3 ، 4، 5) وكل رقم يعني التالي:

1: أبداً لا أفعل هذا إطلاقاً.

2: أفعل ذلك من حين إلى آخر.

3: أحيانا أفعل ذلك (بنسبة 50%).

4: عادة أفعل ذلك.

5: دائماً أفعل ذلك

الرجاء وضع دائرة حول الرقم الذي يعبر عن رأيك. نود أن نلفت انتباهكم أنه لا توجد إجابة

صحيحة أو خطأ للبند الواردة في هذا النص . كما أن المشاركة في هذه الاستبانة اختيارية وليس إلزامية

وسوف تستخدم المعلومات بغرض البحث العلمي فقط.



العبارة	أبداً	من نصف إلى آخر	أحياناً (50%)	عادة	دائماً
1. يكون لي هدف حينما أقرأ.	1	2	3	4	5
2. أفكر فيما أعرفه مسبقاً لمساعدتي في فهم ما أقرأ.	1	2	3	4	5
3. ألقى نظرة عامة على النص لمعرفة موضوعه قبل القراءة.	1	2	3	4	5
4. أفكر فيما إذا كان محتوى النص المقروء يتفق مع هدفي من القراءة.	1	2	3	4	5
5. أتصفح النص أولاً للتعرف إلى خصائصه مثل طول النص وطريقة تنظيمه.	1	2	3	4	5
6. أحدد بالضبط ما أقرأه بتمعن وما يمكنني إهماله.	1	2	3	4	5
7. استعين بالجداول والأشكال والصور الموجودة في النص لزيادة فهمي له.	1	2	3	4	5
8. استعين ببعض المؤشرات في محتوى النص لمساعدتي على فهم أفضل لما أقرأ.	1	2	3	4	5
9. استعين بالترتيبات المطبعية من مثل الخط العريض والمائل لمعرفة المعلومات الأساسية.	1	2	3	4	5
10. أحلل وأقيم المعلومات الموجودة في النص.	1	2	3	4	5
11. أراجع ما أفهمه حينما تعترضني معلومات جديدة.	1	2	3	4	5
12. أحاول تخمين محتوى النص المقروء حينما أقرأ.	1	2	3	4	5
13. أراجع لأتأكد إذا ما كانت تنبؤاتي عن النص المقروء صواباً أم خطأ.	1	2	3	4	5
14. أقرأ ببطء وبترو لأتأكد من فهمي لما أقرأ.	1	2	3	4	5
15. أراجع قراءة النص مرة ثانية حينما أفقد التركيز على القراءة.	1	2	3	4	5

5	4	3	2	1	16. تتوافق سر عتي في القراءة تبعاً لما أقرأه.
5	4	3	2	1	17. حينما يصبح النص صعباً أعطي مزيداً من الانتباه لما أقرأ.
5	4	3	2	1	18. أتوقف من حين إلى آخر لأفكر فيما أقرأ.
5	4	3	2	1	19. أحاول أن أتصور وأتخيل المعلومات لمساعدتي في تذكر ما قرأته.
5	4	3	2	1	20. أكرر قراءة النص لأفهمه فهماً تاماً حينما يصبح الموضوع صعباً.
5	4	3	2	1	21. أحاول تخمين معنى الكلمة أو العبارة في الجملة التي لا أفهمها.
5	4	3	2	1	22. أكتب بعض الملحوظات حينما أقرأ لمساعدتي على فهم ما قرأت.
5	4	3	2	1	23. أقرأ قراءة جهريّة لمساعدتي على فهم ما أقرأ حينما يصبح النص صعباً.
5	4	3	2	1	24. أخلص ما قرأته لمراجعة فهمي للأفكار الأساسية.
5	4	3	2	1	25. أناقش ما قرأته مع الآخرين للتأكد من فهمي للنص.
5	4	3	2	1	26. أضع خطأ أو دائرة حول المعلومات في النص لمساعدتي على تذكرها.
5	4	3	2	1	27. أستعين بالمراجع من مثل المعجم لمساعدتي على فهم ما أقرأ.
5	4	3	2	1	28. أكتب بعض الأفكار بعباراتي الخاصة لفهم أفضل لما قرأت.
5	4	3	2	1	29. أراجع النص مراجعة تامة للربط بين الأفكار.
5	4	3	2	1	30. أطرح على نفسي بعض الأسئلة عند قراءتي للنص لعلني أجد لها إجابات.

## Appendix D

### Survey of Reading Motivation

**Dear Students,**

The purpose of this survey is to collect information about your reading motivation level while learning to read in the English Language.

All of the items below refer to motivation levels associated with learning how to read in English. Each statement is followed by five numbers (1, 2, 3, 4, 5). Each number means the following:

1-Strongly disagree (1)

2- Disagree (2)

3- Neutral (3)

4- Agree (4)

5- Strongly Agree (5)

After reading each statement, circle the number (1, 2, 3, 4, or 5) which reflects your opinion.

Participating in this survey is voluntarily and your data will be used for research purposes ONLY.

Note that there are no right or wrong answers to any of the items on this survey.

Thank you

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I am a good reader in English.	5	4	3	2	1
2. I will do well in reading in English next year.	5	4	3	2	1
3. I feel satisfied when I understand difficult English reading texts.	5	4	3	2	1
4. It is important to me to be a good reader in English.	5	4	3	2	1
5. Learning to read in English helps improve my academic achievements.	5	4	3	2	1
6. Learning to read in English is important as it widens my view.	5	4	3	2	1
7. Learning to read in English helps me organize my ideas.	5	4	3	2	1
8. Learning to read in English helps me understand life better.	5	4	3	2	1
9. Reading in English helps me be a good writer.	5	4	3	2	1
10. Reading in English increases my higher thinking skills.	5	4	3	2	1
11. Reading in English develops my interpersonal skills.	5	4	3	2	1
12. I like to read in English for academic purposes.	5	4	3	2	1
13. I like to read in English for enjoyment.	5	4	3	2	1
14. Progress in reading gives me a sense of satisfaction.	5	4	3	2	1
15. Understanding difficult texts encourages me to read more.	5	4	3	2	1
16. Reading in English assists me my graduate study.	5	4	3	2	1
17. Reading in English grants me better opportunities to get a better job.	5	4	3	2	1
18. Learning to read in English improves my research skills.	5	4	3	2	1
19. Learning to read makes me more knowledgeable of what is happening around us.	5	4	3	2	1
20. Reading in English helps me understand different cultures and lifestyles of people.	5	4	3	2	1
21. I study harder when reading in English.	5	4	3	2	1
22. I pay more attention when reading texts in English.	5	4	3	2	1

## Appendix E

**Survey of Reading Motivation (Arabic)**  
**استبانة دافعية تعلم القراءة**

**عزيزي الطالب:**

تهدف هذه الاستبانة إلى تحديد مستويات دافعتك إلى القراءة في اللغة الإنجليزية.

كل الفقرات الواردة في النص أدناه تعود إلى معرفة مستويات الدافعية للقراءة باللغة الإنجليزية. وكل فقرة

يتبعها خمسة أرقام متدرجة ( 1 ، 2 ، 3 ، 4، 5) وكل رقم يعني التالي:

1: لا أوافق بشدة

2: لا أوافق

3: محايد

4: أوافق

5: أوافق بشدة

الرجاء وضع دائرة حول الرقم الذي يعبر عن رأيك. نود أن نلفت انتباهكم أنه لا توجد إجابة

صحيحة أو خطأ للبنود الواردة في هذا النص . كما أن المشاركة في هذه الاستبانة اختيارية وليس إلزامية

وسوف تستخدم المعلومات بغرض البحث العلمي فقط.

مع جزيل الشكر.

العبارة	لاوافق بشدة	لاوافق	محايد	وافق	وافق بشدة
1. أنا قارئ جيد باللغة الانجليزية .	1	2	3	4	5
2. سيكون أدائي في القراءة باللغة الانجليزية أفضل في العام القادم .	1	2	3	4	5
3. أشعر بالرضا عندما أفهم نصوصاً صعبة باللغة الانجليزية.	1	2	3	4	5
4. تعد إجادة القراءة باللغة الانجليزية أمراً مهماً لي.	1	2	3	4	5
5. تساهم القراءة باللغة الانجليزية في تحسين تحصيلي الدراسي.	1	2	3	4	5
6. توسع القراءة باللغة الانجليزية من نظرتي للأشياء.	1	2	3	4	5
7. تساعدني القراءة باللغة الانجليزية على تنظيم أفكاري.	1	2	3	4	5
8. تساعدني القراءة باللغة الانجليزية على فهم الحياة بشكل أفضل.	1	2	3	4	5
9. تساعدني القراءة باللغة الانجليزية على أن أصبح كاتباً جيداً.	1	2	3	4	5
10. تنمي القراءة باللغة الانجليزية مهارات التفكير العليا.	1	2	3	4	5
11. تنمي القراءة باللغة الانجليزية من مهاراتي الاجتماعية.	1	2	3	4	5
12. أحب أن أقرأ باللغة الانجليزية لأغراض دراسية.	1	2	3	4	5
13. أحب أن أقرأ باللغة الانجليزية لأغراض غير دراسية من أجل المتعة.	1	2	3	4	5
14. يمنحني التقدم في القراءة الشعور بالرضا.	1	2	3	4	5
15. يشجعني فهمي للنصوص الصعبة على مزيد من القراءة.	1	2	3	4	5
16. تساعدني القراءة باللغة الانجليزية على إكمال تعليمي الجامعي.	1	2	3	4	5
17. تمنحني القراءة باللغة الانجليزية فرصة الحصول على عمل أفضل.	1	2	3	4	5
18. تحسن القراءة باللغة الانجليزية من مهاراتي في البحث والمعرفة.	1	2	3	4	5
19. تزيد القراءة باللغة الانجليزية من معرفتي بما يدور حولي من أحداث.	1	2	3	4	5
20. تساعدني القراءة على فهم الثقافات وأنماط الحياة المختلفة.	1	2	3	4	5
21. أدرس بجد عندما أتعلم القراءة باللغة الانجليزية.	1	2	3	4	5
22. أركز أكثر عند قراءة النصوص باللغة الانجليزية.	1	2	3	4	5

## Appendix F

## Formal Permission from The UAE Ministry of Education

UNITED ARAB EMIRATES  
MINISTRY OF EDUCATION  
AJMAN EDUCATIONAL ZONE



الإمارات العربية المتحدة  
وزارة التربية والتعليم  
إدارة منطقة عجمان التعليمية

التاريخ: ١٥ / ٢ / ٢٠١٦

الرقم: ١٣٠ / ٦ / ٢٠١٥

المسيد / مدير مدرسة الأكاديمية الأولى .. المحترم  
السيدة / مديرة مدرسة العمدة الدولية .. المحترمة  
السيدة / مديرة مدرسة عجمان الحديثة .. المحترمة

السلام عليكم ورحمة الله وبركاته ..

م / لا مانع

بداية يطيب لإدارة منطقة عجمان التعليمية ، أن تتقدم لكم بخالص الشكر والتقدير  
و الامتنان على حسن تعاونكم معنا .

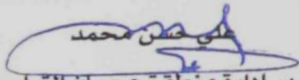
نحيط سيادتكم بأنه قد تمت الموافقة على تنفيذ السيد :

صبيحي يوسف أحمد أبو الحطب لما يأتي :

- نوع النشاط : عمل استبانات وعمل امتحانات .
- الفئة المستهدفة : طلبة الصف السابع .
- تاريخ التنفيذ : شهر فبراير ومارس / 2016 .
- مكان التنفيذ : مدرسة الأكاديمية الأولى و مدرسة عجمان الحديثة ومدرسة العمدة الدولية

الرجاء من سيادتكم التكرم بالإيعاز لمن يلزم بعمل اللازم .

وتفضلوا بقبول فائق التحية والاحترام ..

  
مدير إدارة منطقة عجمان التعليمية



www.moe.gov.ae

مكتب: +971 6 703 9999 \* فاكس: +971 6 847 8457 \* عجمان \* الإمارات العربية المتحدة  
TELEPHONE: +971 6 703 9999 \* FACSIMILE: +971 6 847 8457 \* AJMAN \* UNITED ARAB EMIRATES  
E MAIL: ajmzone@moe.gov.ae \* Call Center 800 51115 مركز الاتصال



## Appendix G

## Permission From SORS Authors

[sign out](#) | [Sobhi Y. A. Abuhattab](#)

[Find Someone](#)
[Options](#)

Kouider Mokhtari [kmokhtari@uttyler.edu]

[Actions](#)

To: [Sobhi Y. A. Abuhattab](#)

Cc: [Sadiq Abdulwahed Ismail](#), [Barbara Calderwood \[calderwoodbj@apstate.edu\]](#)

16 February 2016 23:33

• You replied on 16/02/2016 23:50.

Hi Sobhi—

Thanks for your interest in using SORS in your research. As authors, we are pleased to grant you permission to do so as long as you use as-is. If you intend to modify in any way, please consider seeking permission to do so from the *Journal of Developmental Education* as well, which holds the copyright.

Best of luck in your research.

Kouider

Kouider Mokhtari, Anderson-Vukelja-Wright Endowed Professor  
The University of Texas at Tyler  
School of Education  
3900 University Blvd  
Tyler, Texas 75799  
(903) 566-7177

Appendix H

Parent’s Consent Form (Tablet digital texts Group)

Dear Parents:

We would like to inform you that your child will participate in a research study to explore the impact of the tablet digital text and print text features on students’ reading achievement, reading strategies use and reading motivation. The students will study one unit using Tablet Digital Text and he/she will be targeted to respond to Pretest and Posttest to measure reading achievement, a survey to measure reading strategies and a survey to measure reading motivation. Participating in this survey is voluntarily and your data will be used for research purposes. The collected data will be confidential and anonymous and used only for the research purposes. It is interesting to state that the study may raise the students’ awareness to the reading strategies and motivation items.

If you approve of your child participation in the study, please complete the following and return this letter to the school.

\_\_\_ I approve

\_\_\_ I DO NOT approve

Parent’s Signature \_\_\_\_\_

Thank you,

## Appendix I

## Parent's Consent Form (Tablet digital texts Group) Arabic

## موافقة ولي أمر الطالب على المشاركة في الدراسة

السيد الفاضل ولي أمر الطالب :

تحية طيبة وبعد.

نود أن نعلمكم أن طفلك سوف يشارك في دراسة بحثية لاستكشاف تأثير النص الرقمي للحاسوب اللوحي و النص المطبوع لدى طلاب الصف السابع علي التحصيل الدراسي في القراءة واستخدام القراءة ودافعية القراءة. سيقوم الطلاب بدراسة وحدة دراسية باستخدام النص الرقمي للحاسوب اللوحي وأداء اختبار قبلي و بعدي لقياس التحصيل الدراسي في القراءة ، ثم الاجابة على استبانة لقياس استراتيجيات القراءة واستبانة لقياس دافعية القراءة.

علما ان المشاركة في هذه الدراسة طوعية وليس الزامية و سيتم استخدام البيانات الخاصة التي تم جمعها سرية تامة و موثوقة و تستخدم فقط لأغراض البحث. ومن المثير للاهتمام أن هذه الدراسة قد تثير وعي الطلاب إلى استراتيجيات القراءة و التحفيز.

لذا نأمل منكم الموافقة على أن يقوم الطالب بالمشاركة في الدراسة.

\_\_\_ اوافق \_\_\_ لا اوافق

اسم وتوقيع ولي الأمر: .....

مع تحيات الباحث: صبحي يوسف احمد ابو حطب

Sobhi Abu Hatab

[sobhi.abuhatab@uaeu.ac.ae](mailto:sobhi.abuhatab@uaeu.ac.ae)

**Appendix J****Parent's Consent Form (Print Texts Group)**

Dear Parents:

We would like to inform you that your child will participate in a research study to explore the impact of the tablet digital text and print text features on students' reading achievement, reading strategies use and reading motivation. The students will study one unit using Print Text and he/she will be targeted to respond to Pretest and Posttest to measure reading achievement, a survey to measure reading strategies and a survey to measure reading motivation. Participating in this survey is voluntarily and your data will be used for research purposes. The collected data will be confidential and anonymous and used only for the research purposes. It is interesting to state that the study may raise the students' awareness to the reading strategies and motivation items.

If you approve of your child participation in the study, please complete the following and return this letter to the school.

☐ I approve

☐ I DO NOT approve

Parent's Signature \_\_\_\_\_

Thank you,

## Appendix K

## Parent's Consent Form (Print texts Group) Arabic

## موافقة ولي أمر الطالب على المشاركة في الدراسة

السيد الفاضل ولي أمر الطالب :

تحية طيبة وبعد.

نود أن نعلمكم أن طفلك سوف يشارك في دراسة بحثية لاستكشاف تأثير النص الرقمي للحاسوب اللوحي و النص المطبوع لدى طلاب الصف السابع علي التحصيل الدراسي في القراءة واستخدام القراءة ودافعية القراءة. سيقوم الطلاب بدراسة وحدة دراسية باستخدام النص الرقمي للحاسوب اللوحي وأداء اختبار قبلي و بعدي لقياس التحصيل الدراسي في القراءة ، ثم الاجابة على استبانة لقياس استراتيجيات القراءة واستبانة لقياس دافعية القراءة.

علما ان المشاركة في هذه الدراسة طوعية وليس الزامية و سيتم استخدام البيانات التي سيتم جمعها بسرية تامة و موثوقة و تستخدم فقط لأغراض البحث. ومن المثير للاهتمام أن هذه الدراسة قد تثير وعي الطلاب إلى استراتيجيات القراءة و التحفيز.

لذا نأمل منكم الموافقة على أن يقوم الطالب بالمشاركة في الدراسة.

\_\_\_ اوافق \_\_\_ لا اوافق

اسم وتوقيع ولي الأمر: .....

مع تحيات الباحث: صبحي يوسف احمد ابو حطب

Sobhi Abu Hatab

sobhi.abuhatab@uaeu.ac.ae

## Appendix L

### Jury of Referees for Validating Survey of Reading Motivation

Name	College	Department
1. Dr. Sadiq Ismail	College of Education,	Curriculum & Instruction
2. Dr.Negmelden Alsheikh	College of Education	Curriculum & Instruction
3. Prof Mohammad Jaber	College of Education	Curriculum & Instruction
4. Dr. Sally.Ali	College of Humanities	Department of Linguistics
5. Dr. Hala El Hwoeris	College of Education	Curriculum & Instruction
6. Dr.Moh. Sadag Shaban	College of Education	Curriculum & Instruction
7. Dr. Ali Saeed Ibrahim	College of Education	Foundation of Education
8. Dr. Adeb Al Jarrah	College of Education	Curriculum & Instruction
9. Prof. Omar Attari	College of Humanities	Linguistics
11.Mrs.Timyra Brooks	The First Academy	English Department

Appendix M

Jury of Referees for Validating Arabic Version of SORS

Name	Title	Department
1. Dr. Sadiq Ismail	Associative professor	Curriculum & Instruction
2. Dr. Negmeldin Alsheikh	Associative professor	Curriculum & Instruction
3. Prof Mohammad Jaber	Full professor	Curriculum & Instruction
4. Dr. Sally Ali	Associative professor	Department of Linguistics
5. Mrs. Hanadi Hiteeni	Arabic Supervisor	Al Itihad School
6. Mrs. Zenab Abdrahman	Arabic Supervisor	Arabic Department
7. Dr. Khader Al hellow	Sworn Translator	Alain Translation Office
8. Mr. Ali Al herbawi	Translator	SSAT Middle East
9. Mr. Hisham Al bukhari	Translator	SSAT Middle East



Appendix N

Jury of Referees for Validating Arabic Version of Survey of Reading Motivation

Name	Title	Department
1. Dr. Sadiq Ismail	Associative professor	Curriculum & Instruction
2. Dr. Negmelden Alsheikh	Associative professor	Curriculum & Instruction
3. Prof Moh.Jaber	Professor	Curriculum & Instruction
4. Dr. Sally Ali	Associative professor	Department of English
5. Mrs. Hanadi Hiteeni	Arabic Supervisor	Al Itihad School
6. Mrs. Zenab Abdrahman	Arabic Supervisor	The First Academy
7. Dr. Khader Al hellow	Sworn Translator	Alain Translation Office
8. Mr Ali Al Herbawi	Translator	SSAT Middle East
9. Mr Hisham Al bukhari	Translator	SSAT Middle East

## Appendix O

### Jury of Referees for reviewing Reading Achievements Test

Name	College	Department
1. Dr. Sadiq Ismail	College of Education	Curriculum & Instruction
2. Dr. Sally.Ali	College of Humanities	Department of English
3. Mrs. Angelia Fain	The First Academy	Principal
4. Mrs.Timyra Brooks	The First Academy	Academic Coordinator
5. Mr. Ali Al Herbwa	ADEC	English Supervisor
7. Catherine Elbouzaidi	The First Academy	HoD of English Department
8.Dr. Ibrahim Jawarnah	ADEC	English language supervisor
9. Najat AL Hayik	The First Academy	HoD of English Depart.

## Appendix P

### Constructs of Reading strategies

#### Global Strategies

- 1- I have a purpose in mind when I read.
- 2- I think about what I know to help me understand what I read.
- 3- I preview the text to see what it's about before reading it.
- 4- I think about whether the content of the text fits my reading purpose.
- 5- I skim the text first by noting characteristics like length and organization.
- 6- I decide what to read closely and what to ignore.
- 7- I use tables, figures, and pictures in the text to increase my understanding.
- 8- I use context clues to help me better understand what I'm reading.
- 9- I use typographical aids like boldface and italics to identify key information.
- 10- I critically analyze and evaluate the information presented in the text.
- 11- I check my understanding when I come across conflicting information.
- 12- I try to guess what the material is about when I read.
- 13- I check to see if my guesses about the text are right or wrong.

#### Problem-Solving Strategies

- 14- I read slowly but carefully to be sure I understand what I am reading.
- 15- I try to get back on track when I lose concentration.
- 16- I adjust my reading speed according to what I'm reading.
- 17- When the text becomes difficult, I pay closer attention to what I'm reading.
- 18- I stop from time to time and think about what I'm reading.
- 19- I try to picture or visualize information to help me remember what I read.
- 20- When the text becomes difficult, I re-read to increase my understanding.
- 21- I try to guess the meaning of unknown words or phrases.

**Support Strategies**

- 22- I take notes while reading to help me understand what I read.
- 23- When the text becomes difficult, I read aloud to help me understand what I read
- 24- I summarize what I read to reflect on important information.
- 25- I discuss what I read with others to check my understanding.
- 26- I underline or circle information in the text to help me remember it.
- 27- I use reference materials such as dictionaries to help me understand what I read.
- 28- I paraphrase (restate ideas in my own words) to better understand what I read.
- 29- I go back and forth in the text to find relationships among the ideas in it.
- 30- I ask myself questions I like to have answered in the text.

## Appendix Q

### Short Forms of SORS

#### Global Reading Strategies

1. Setting purpose for reading
2. Using prior knowledge
3. Previewing text before reading
4. Checking how text content fits purpose
5. Noting text characteristics
6. Determining what to read closely
7. Using text features (e.g. tables)
8. Using context clues
9. Using typographical aids (e.g. italics)
10. Analyzing and evaluating the text
11. Checking understanding
12. Predicting or guessing text meaning
13. Confirming predictions

#### Problem Solving Reading Strategies

14. Reading slowly and carefully
15. Trying to stay focused on reading
16. Adjusting reading rate
17. Paying close attention to reading
18. Pausing and thinking about reading
19. Visualizing information read
20. Rereading for better understanding

21. Guessing meaning of unknown words

**Support Reading Strategies**

22. Taking notes while reading

23. Reading aloud for better understanding

24. Summarizing the important information

25. Discussing with others to check understanding

26. Underlining information in text

27. Using reference materials

28. Paraphrasing for better understanding

29. Finding relationships among text ideas

30. Asking oneself questions

## Appendix R

### Constructs of Reading Motivation

#### Reading Efficacy Values

1. I am a good reader in English.
2. I will do well in reading in English next year.
3. I feel satisfied when I understand difficult English reading texts.
4. It is important to me to be a good reader in English.

#### Attainment Values

5. Learning to read in English helps improve my academic achievements.
6. Learning to read in English is important as it widens my view.
7. Learning to read in English helps me organize my ideas.
8. Learning to read in English helps me understand life better.
9. Reading in English helps me be a good writer.
10. Reading in English increases my higher thinking skills.
11. Reading in English develops my interpersonal skills.

#### Intrinsic Values

12. I like to read in English for academic purposes.
13. I like to read in English for enjoyment.
14. Progress in reading gives me a sense of satisfaction.
15. Understanding difficult texts encourages me to read more.

#### Extrinsic Values

16. Reading in English assists me in my graduate study.
17. Reading in English grants me better opportunities to get a better job.
18. Learning to read in English improves my research skills.



- 19 Learning to read makes me more knowledgeable of what is happening around us.
- 20 Reading in English helps me understand different cultures and lifestyles of people.

**Engagement Values**

- 21 I study harder when reading in English.
- 22 I pay more attention when reading texts in English.

## Appendix S

## The UAEU Social Sciences Research Ethics Committee Approval

Social Sciences Research Ethics Committee  
-Approval-Proposal number: ERS\_2016\_5468Title of Project: The Impact of Tablet Digital text VS Print Text on the Seventh Graders' Reading Comprehension Scores, Strategies & MotivationPI: Sobhi Abuhattab

Co-PI: \_\_\_\_\_

The above proposal has been reviewed by:

- ☒ one member of the Social Sciences REC  
☐ two members of the *Social Sciences REC*

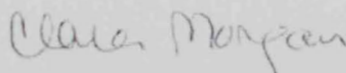
And the decision is:

- ☒ Favourable  
☐ Favourable with Additional Conditions  
☐ Provisional Opinion  
☐ Unfavourable Opinion  
☐ No Opinion (Proportionate Review\* only)

Reason:

After evaluating this proposal, we see no major ethical concerns. Therefore, the proposal is approved for the duration of the research study.

Name Clara Morgan  
 (Chair or designee):



Signature

January 8, 2017

Date

The decisions available to the Committee are defined as follows:

**"Favourable with standard conditions"** means that the study has ethical approval to proceed, as long as local management approval is in place prior to the study starting.

**"Favourable with Additional Conditions"** means that the study has ethical approval in principle but there are certain issues, which need to be addressed prior to the study starting such as a minor change to participant documentation. It is the responsibility of the Principal Investigator to ensure that additional conditions are met.

**"Provisional Opinion"** means that there are more substantial changes, which need to be made before the study starts. These changes would require further ethical review on the basis of which a favourable or unfavourable opinion would be given by the Ethics Committee.

**Unfavourable Opinion** means that the study does not have ethical approval to proceed and a further application would need to be submitted should the applicant choose to proceed with the study. Advice and guidance will be provided by the Committee setting out the reasons for their decision and suggesting changes which would mean that a favourable opinion on resubmission would be more likely. For applications processed through the Proportionate Review\* Service an unfavourable opinion is only given where the application is of such poor quality that it is probable that an unfavourable opinion would be given if it were to be reviewed at a full meeting.

**No Opinion (Proportionate Review\* only)**, means that the Proportionate Review sub-committee (3 members) have deemed that the proposed study does have material ethical issues and will therefore need to be reviewed by a full committee.

*\*The aim of proportionate review is for studies which present minimal risk or burden for participants to be reviewed by a proportionate review sub-committee within 14 days of receipt of a valid application.*